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LOUISIANA CORN-GROWING.

Prof. Fred. H. Rankin of Urbana, Ill., superintendent of the Agricultural College Extension of the University of Illinois, has recently been in Louisiana studying the corn-growing possibilities of that State, which are now beginning to attract such universal attention. Commenting on his investigations, Professor Rankin said:

It means the present generation will not live to see the day when the fertility of the Louisiana soil is exhausted. Artificial fertilizers will not be needed in this generation.

I visited Louisiana because I wanted to be able to give my students some first-hand information. There are many bright men attending the University of Illinois who will want to invest in farm lands. To invest in Middle and Western lands at anything like a reasonable price is out of the question. The price of farm lands simply prohibits the young man from turning his attention to farming.

I shall not hesitate to give my students the advantage of what I have learned about Louisiana. It is my opinion that the center of population will shift toward the South, and it ought to be a source of gratification to the people of New Orleans to know that they are living in the very center of an agricultural country, which by the most profitable methods cannot be farmed to exhaustion in this generation of the world.

Professor Rankin has stated a fact in regard to the high price of land in the West and North deterring young men from going into farming which has not yet received adequate attention. Some time ago the writer, while traveling, met an intelligent young man from Pennsylvania who was in the South looking for farm lands for himself and some friends. He was a practical farmer who by hard work in the employment of others, as tenant, had saved a few thousand dollars, but he said that it was impossible in the whole rich val-

ley in which he lived to buy any farm land at anything less than a prohibitory price. He and other young men had found it necessary, if they hoped ever to be anything but tenant farmers or workers for others, to look to the South, and he was then investigating the possibilities of buying Southern farm property. His statements correspond with those of Professor Rankin. What is true of Pennsylvania is true of Illinois and of many other States. The price of good farm land is so high that it does not offer any opportunity to young men. Owners of farm property in the West, in Pennsylvania and other States, where prices have so greatly advanced, have made money on the increase in the value of farm lands. Many men have grown rich in this way. The advance in the values of farm lands has been somewhat commensurate in many places with the advance in city property. The men who have seen how others have grown wealthy in this way and the men who have themselves made money by such an advance are beginning now to recognize that similar possibilities exist in the South. They see that in this section farm lands are very much lower in value in comparison with their earning capacity than similar lands elsewhere. Their thoughts, therefore, are naturally turning to the South, and Professor Rankin, in his statement that he would commend to the students of the Illinois Agricultural College the great possibilities in Louisiana, may well be followed by professors in other colleges throughout the country, for in doing so they are opening to young men greater possibilities for success than they could present in any other way.

DOES THE SOUTH LOVE TO BE PATRONIZED?

"The chief trouble with the South," said a Southern banker a few days ago, "is its willingness to be patronized and to be pitied."

Is the indictment true? It was pronounced by a man long identified with Southern development; by one whose firm has been instrumental in investing millions in the South.

"Willing to be patronized and pitied!" What a charge to bring against the South; against a people who have for generations boasted of their independence and self-reliance. But before resenting it, stop for a moment and consider how the South has welcomed the almsgiver; how it has sought gifts for its schools from men upon whom it had no claim; how it has been Carnegieized with libraries which could and should have been provided by its own people. Think of how it has permitted the story of disease to go broadcast throughout the world, exaggerated far beyond any possible justification in the facts, merely to be made the recipient of a million-dollar hookworm fund. Before calling the banker down, let us study the situation and see if we are really losing our stamina, our self-reliance, our manhood, by "being willing to be patronized—willing to be pitied."

A WIDE-AWAKE RAILROAD MOVE.

The Queen & Crescent Route, which is the collective title of the trunk line formed by the Cincinnati, New Orleans & Texas Pacific Railway, the Alabama Great Southern and the New Orleans & Northeastern railroads, recently gave its industrial and commercial agents, to the number of 50 or more, an excursion over its lines to the Ohio Valley Exposition at Cincinnati, the object of the trip being not only to visit the exposition, but to inform its participants concerning the natural resources and general development—industrial and otherwise—along the company's system. It was an object-lesson on a big scale to acquaint the line's representatives with what it had to offer to prospective settlers in the way of business opportunities of all sorts, and to prepare them by this personal acquaintance for discussing the advantages of the country traversed with that convincing familiarity and emphasis which can be given only by those who know that of which they speak. So generally satisfactory was the excursion in all its aspects that it is said the company will give others from time to time, as may appear advisable, to stimulate interest among the industrial and commercial agents, and thus enlist them to make the most of their endeavors to obtain business for the company.

Other railroad companies would act wisely if they followed this example set by the Queen & Crescent, which merits high praise for this progressive educational step on behalf of its representatives. The public is only too familiar with a type of agent or solicitor whose knowledge of his road and the country it serves is only of a general nature, and would serve him equally well were he representing the Grand Trunk of Canada or the Mexican Central, which is not saying much. In other words, he has no fund of detailed information about his own system or the country tributary to it, and while he may be able to obtain such information when requested, he too frequently misses the opportunity of scoring a business-getting point by not having such knowledge immediately at hand and being able to impart it to those whose patronage he seeks. A commercial or industrial agent of a railroad should be able to talk up his line and his country just as skillfully as a salesman discusses the goods offered by his house. Railroad men, as well as others, would think poorly of a salesman who did not know what goods his firm had in stock, but to many of them it does not seem to occur that a traffic solicitor ought to know much more than his tariff of rates; yet, indeed, he should have a large and varied fund of information; he needs to know his stock just as much as does the drummer in the dry goods business, for instance.

The MANUFACTURERS RECORD has many a time had striking illustrations of the utter lack of knowledge of the

South, or even of their own immediate sections, of railroad agents. Every railroad man in the South ought to be compelled by his road to be thoroughly informed about its resources and its progress. On these points he ought occasionally to have to stand a pretty rigid examination. Then he would be a factor in the development of the South, and thus in the prosperity of his road.

CALLING THEM HOME.

Referring to the mention by the MANUFACTURERS RECORD of the movement of the Carolina, Clinchfield & Ohio Railway to bring back to homes along its route Southern-born men in other sections of the country, Mr. L. T. Nichols, Chester, S. C., general manager of the Carolina & Northwestern Railway Co., writes:

This is good work and I am glad to see it going on. There is a field for it in this section of the Carolinas. Thousands of the best kind of citizens have left that territory in the last 10 or 15 years. Wherever I meet them in the country they have "made good." If they come back home they will be in a position to realize the advantages of the country they left, and I am satisfied they left because the country had not reached the stage of development to attract them. Now we can use them and will be glad to have them.

The industrial department of the Clinchfield, having this project in charge, reports that persons in its territory are sending in names of friends and relations in the West who may be interested in the literature setting forth the advantages offered in the section traversed by the railroad. The wise suggestion, too, has been made that the stay-at-homes write direct to the exiles, telling them of improved conditions and urging them to come back, if only for a visit. This campaign has been started at a most opportune time. All parts of the South are experiencing the beneficial effects of the work that has been done for a generation and more in letting the rest of the country into the secrets of Southern resources. Natives of other parts of the country less favored than the South are showing in greater and greater numbers their appreciation of the opportunities in the South. The exiles can hardly remain long immune to the epidemic.

FULFILLING TEXTILE HOPES.

Sixty odd years ago some Southern men advocated an export tax upon raw cotton as a means of building up the cotton mill industry in their section and of enhancing the price of the staple to the growers. If those men could view the situation today they would be prone to accept the doctrine that prayer is answered, though not always, perhaps, in just the way planned by the prayer. In the light of textile statistics of the past twenty years, revealing the fact that in the season just closed Southern mills took within 90,000 bales of the number of bales of cotton exported to Great Britain from this coun-

try in the same time, the earlier aspirations assume vital interest.

One of the leaders for the material development of the South in the middle of the last century, at a time when the rise of cotton mills in the South had begun to arouse the anxiety of New England spinners and to move the English ones to devise schemes for obtaining the staple from regions under the British flag, was Hamilton Smith, New Englander by birth, but then a citizen of Kentucky. Writing in July, 1849, in suggestion of methods whereby producers of cotton might advance and control its price, he strongly advocated the adoption of an amendment to the Constitution of the United States so as to permit the imposition after 1865 of such an export duty on raw cotton as would ensure the fabrication of all coarse cotton goods at home. He sketched the possible results as follows:

Will anyone deny that, within the period named, cotton mills would start up, as if by magic, all over the country, and sufficient for the working up of the entire cotton crop, whatever its increase may be? Our own surplus labor would direct its attention to this employment and to its auxiliary branches of industry. The English, French, Belgian, Swiss, Prussian and Saxon cotton mills would be gradually closed, and their spinners and weavers, by hundreds of thousands, would bring their tools of trade where they would be of use. Capital would follow this labor; we should have a home market for whatever is produced by our fertile soil, and the rich ores that now lie undisturbed beneath that soil; money would accumulate, because we should have ceased to send it abroad in large quantities for the necessities of life. Our exports of cotton would be exchanged with China for tea, with Brazil for coffee, with Southern Asia and the islands of the Indian Ocean for spices, with the West Indies for inter-tropical fruits, with Chile, Peru, Mexico and California for the precious metals. Our land would appreciate, our labor would be better paid, and our capital would yield larger returns up to the point at which the supply of the cotton fabric—the product of the combined surplus labor of the country—would reach the demand.

This idea was developed from the planter's standpoint by S. R. Cockrill of Nashville in September of the same year. He was for an export duty of \$5 a bale to begin to be effective in 1860, and he was convinced that ten cents a pound would thus be ensured to the grower for his cotton and that the South would become the richest part of the Union. He wrote:

An average crop now of United States cotton is about 2,300,000 bales, which at six cents is \$55,000,000. The estimated cost of spinning and weaving a pound of cotton is three cents, making two yards to the pound, equal to eighteen cents per pound, at nine cents per yard for Osanaburga. The crop, then, when spun and wove, is worth eighteen cents per pound, making \$180,000,000, allowing 10 per cent. for waste, instead of \$55,000,000, the yield now, when sold as raw cotton.

Cockrill went into minute details of the policies to be pursued in carrying out the plan and added:

It is the duty of their owners to bring to the aid of this available corps of regular laborers in the field, the steam engine, and the iron muscle of the spindle and loom. With these implements they can put the labor of the field into consumable shape, which leaves the world open as a market.

No longer will they pile up the cotton bales around the English mill agent in Liverpool and suffer it to be sacrificed because they have no remedy. There will be a demand for coarse, heavy, cheap cotton goods as long as there are laborers in the world to wear them, and in this shape the great bulk of the cotton crops will be consumed. Europe can continue to make the fine goods in which the raw material is no part of the cost, one pound making twenty yards of fine muslins.

South America, Asia, Africa and the East and West Indies grow about 470,000 bales of fine cotton, well suited for fine fabrics. This supply Europe could still convert into fine fabrics. New England to make prints and all other three to five yard goods, and the

cotton fields in the sunny South, in a warm climate, can work up the bulk of the crop into coarse, heavy goods which will average not exceeding two yards to the pound. This system put into operation would yield to the Southern States for cotton alone \$150,000,000, and supply the spindles now up in the United States. What effect such an income in imports or money would produce upon the trade and commerce of our Southern cities is suggested for reflection only at present.

These arguments, to the effect that the whole South, including the growers of cotton, would be vastly benefited by manufacturing cotton at home instead of shipping it abroad in its raw state, lost none of their weight through advocacy of the unwise export tax proposition. They were advanced when the textile industry in this country was really only in its infancy, and at a time when low prices of cotton caused the South to seek some way to increase the value of its cotton crop. In 1850 all the cotton mills of the country used only 641,000 bales of cotton, and Southern mills used but 96,000 bales, and the value of the cotton crop, seed being a negligible factor in the value, was about \$55,000,000. In the next ten years there was a notable increase in the Southern industry, which represented in 1860 an investment of \$12,000,000, and at nearly every point it was germinal of the achievements that, after a paralysis of nearly twenty years, became manifest in 1880. Now, in 1910, and without an export tax, the dreams of such as Hamilton Smith and S. R. Cockrill have been more than realized. The thread of accomplishment runs all through the figures in the following table:

Year ended Aug. 31.	Exports to Great Britain.		Takings by American mills.		Crop.
	Bales.	Value.	North'n.	South'n.	
1851.....	3,345,000	2,027,000	605,000	8,653,000	
1852.....	3,317,000	2,191,000	686,000	9,035,000	
1853.....	2,301,000	1,587,000	744,000	6,700,000	
1854.....	2,801,000	1,901,000	718,000	7,550,000	
1855.....	3,449,000	2,084,000	863,000	9,901,000	
1856.....	2,239,000	1,600,000	905,000	7,157,000	
1858.....	3,544,000	2,212,000	1,232,000	11,200,000	
1859.....	3,022,000	1,805,000	1,043,000	8,758,000	
1860.....	3,525,000	2,190,000	1,399,000	11,275,000	
1861.....	2,343,000	2,068,000	1,597,000	9,436,000	
1862.....	3,050,000	1,967,000	1,621,000	10,383,000	
1863.....	3,041,000	2,051,000	1,338,000	10,681,000	
1864.....	2,849,000	1,968,000	2,001,000	10,727,000	
1865.....	2,577,000	2,027,000	1,919,000	10,011,000	
1866.....	4,124,000	2,282,000	2,163,000	13,566,000	
1867.....	2,891,000	2,349,000	2,374,000	11,346,000	
1868.....	3,750,000	2,526,000	2,439,000	13,511,000	
1869.....	2,944,000	1,897,000	2,193,000	11,572,000	
1870.....	3,539,000	2,680,000	2,560,000	13,825,000	
1871.....	2,431,000	1,994,000	2,341,000	10,610,000	
Total.	61,202,000	41,206,000	31,341,000	205,897,000	

In 1850 the Southern crop was about 82 per cent. of the world's cotton production. It was worth about \$55,000,000. Now, with its seed, it approaches one billion dollars in value and constitutes about 75 per cent. of the world's crop of 16,000,000 bales. In the past twenty years the South has marketed 205,897,000 bales of cotton, of which Great Britain has taken 61,202,000 bales, or 29.7 per cent.; Northern mills, 41,206,000 bales, or 20 per cent., and Southern mills, 31,341,000 bales, or 15.2 per cent. To be sure, English mills have had other fields than the South to draw from, but their takings from these fields increased only from 405,000 to 634,000 bales between 1859 and 1908. Then, too, it must be borne in mind that the bale of cotton goes much farther in the manufacture of fine goods in the English mills than it did sixty years ago, and that Southern mills have not yet approached their possibilities in the field of fine fabrics. Still, there is great significance in the fact that mills of the South are now using as much cotton as the South grew sixty years ago, and that, while in 1891 Great Britain took 3,345,000 bales, or 38.6 per cent. of the total American crop of 8,653,000 bales; Northern mills, 2,027,000 bales, or 23.4 per cent., and Southern mills, 605,000 bales, or only 6.9 per cent. of the total crop, in 1910, with Great

Britain's percentage reduced to 22.9, its takings having been 2,431,000 of the total 10,610,000 bales of the American crop, and Northern mills taking 1,994,000 bales, or 18.8 per cent., the 2,341,000 bales taken by Southern mills were 22 per cent. of the total crop.

But the South has still to make history in cotton manufacturing. It has already attracted to itself capital from the textile centers of New England, and English mill men have more than once cast inquiring, investing eyes in its direction. Still, only three cotton-growing States consume more cotton than they produce, and five States producing in the past season more than 51 per cent. of the American crop consumed less than 4 per cent. in their mills of the total consumption in the South. The greater the consumption of Southern cotton in well-conducted Southern mills, the stronger will be the illustration of the advantages of the South as a textile field and the greater the incentive to textile interests elsewhere to get in on the ground floor.

THE LABRADOR SPIRIT AND THE SOUTH.

Vigorous imagination was required to lead Wilfrid T. Grenfell to become several years ago a medical missionary in Labrador. It was the imagination that enables a man to comprehend the heights and depths of human suffering and compels him to give his life to its alleviation. Grenfell was knighted in 1907 by Edward VII. Long before that he had received the accolade from the hearts of men and women of two continents who knew how he had worked and what he had wrought and who were able to measure fully the unobtrusive heroism of the man. He has in a recent article in the *National Geographic Magazine* shown that the blessed gift of fine imagination finding vent in sympathy can also be exercised in material things.

Labrador is hardly a land associated with thoughts of an immigration movement. But its possibilities in that respect are strikingly set forth by Sir Wilfrid in his article breathing the self-reliance and optimism of the Labradorians among whom he has so successfully labored. He has no doubt that Labrador can maintain a population larger than the present one, provided the country's natural resources be properly handled by capital. He tells of the great opportunities in products of the sea and in animals and vegetables, the wolves, deer, foxes and bears, the cranberries, currants, raspberries and gooseberries and the carrots, peas, potatoes, lettuce, radishes, beets, etc., which grow well in the open in some quarters, and he adds:

The incalculable energy of the countless falls, including the Grand Falls of the Hamilton River, probably the third largest in the world, and second only to the Victoria Falls in height, is an asset which the future will be unable to overestimate. Now that chemistry stands on the very verge of a synthesis of atoms, and a new world seems to lie at our feet if sufficient energy is procurable, these hitherto unappreciated riches are beginning to excite attention. I have had already inquiries as to the feasibility of bridling these falls for the purpose of collecting nitrogen from the air for fertilizing purposes. It is well known that the world supply of nitrates is giving out; that wood as fuel and even coal are rapidly diminishing. Here lies one immense source of wealth that even the dull eye of a twentieth century scientist can foresee. In our vast bogs lie supplies of peat that are almost inexhaustible; only these last few years has industrial chemistry turned its attention to these natural resources. All round this country the little settlements are bare and denuded of the beautiful evergreen trees given for their protection and for preserving

animal life, just because of the ignorance of the heating material lying in the unused bogs, which, instead of being injured, would be improved by being used as a fuel supply.

The vast area of ledges which run along our east coast produces in places immense quantities of various seaweeds, which the storms pull up and fling at our doors without our having to stir a finger. In Norway the ashes of these weeds, just burnt on the beach, fetch from \$2.25 to \$3.75 a pound, and bring to the country as worked now \$150,000 a year. Nature seems to make special provision for primeval-minded man, which, as he increases in numbers, is withdrawn, and so he is forced to put his wits to work and grow in stature whether he likes it or not.

In the spring berries for us are ready under the snow, shellfish in abundance under the harbor ice. Soon flat fish and round fish are veritably thrown on the beach, and can be dipped out with a hand net and can be speared with a straightened hook on a stick, or, as old Cartwright tells us, are at times so plentiful he could lie on the rocks and catch them by the tail in his hand. Trout we can get in abundance through the ice all winter. Salmon and trout come walking into a net, only a few yards long, tied to your own wharfed.

It might be mentioned in addition that Doctor Grenfell does not regard as impossible the suggestion that the whole climate of Quebec may be changed by damming the straits of Belle Isle and shoving off the arctic current.

Reference is made to his interesting and valuable article as an inspiration for the South, which is so richly endowed with blessings that Labrador cannot even hope to possess with all its optimism. It is a striking illustration of determination to make the most of resources. Such determination has been manifested in the South for more than a quarter of a century, and the imagination of a Grenfell for Labrador in material things has been matched by that of many men for the South who, indeed, have in their way exhibited just as much heroism for the good of their fellows in striving for all things that work to the good. But these Grenfells of the South in materialities have not infrequently been obliged to combat lack of imagination in their fellows; they have too frequently been as the voice crying in the wilderness, and many of them have gone to their reward without having the satisfaction of participating in the realization of their aspiring dreams. But thousands and tens of thousands of others have come into their heritage, and the full coming will be hastened if the whole South could take to heart for practical application the message of hopeful self-reliance coming from Grenfell in rock-bound, ice-rimmed Labrador.

SOUTHWESTERN PROSPERITY.

With wheat bins full of grain and bank vaults full of money,
With cellars full of fruit and larders full of honey,
With labor on full time and still demand for more,
With railways pressed for cars as they never were before,
With hearts so full of hope and past so full of glory,
With the Southwest on a boom, what cause have we to worry?

—Oklahoma City Commercial News.

None except the inability to make "glory" and "worry" rhyme.

Someone has said that the optimist sees the doughnut, while the pessimist sees the hole. There is still a third, who sees both the doughnut and the hole, as well as a reason for each. He, perhaps, makes the best everyday companion of the three, for the pessimist unquestionably gets on the nerves, and the incurable optimist is calculated in the long run to degenerate into a bore.—*Washington Post*.

Of course, the optimist may become a bore, for didn't he have to bore the hole in the doughnut to give the pessimist something to see?

A FLOURISHING SOUTHERN INDUSTRY.

One of the most flourishing industries in the country, but flourishing far more in the South than elsewhere—one growing with greater rapidity here than anywhere else in the world—is that of holding conventions. There are conventions for everything and everybody and every place. No town is too small to capture a convention, and nobody need be disturbed by not being a delegate today, for sooner or later every man in the South will have to be appointed a delegate to something to meet somewhere. Just how the real business people of the South will find time to look after their own affairs and yet attend all of the conventions to which they are appointed as delegates is an unsolved mystery. If the energy and enterprise given to the holding of conventions could be turned into productive channels, the South's growth would simply amaze the world. Before long it will be a rare man who has not been appointed a delegate to something. In fact, there will be so few of that kind that they will likely hold a convention, or perhaps they will organize a new order to be known as "The Men Who Have Been Too Busy Doing Things and Looking After Their Own Affairs to Have Been Made Delegates to Anything."

ALL HONOR TO TEXAS—BUT GALVESTON FIRST.

San Antonio, Dallas, Houston and Fort Worth, with the remarkable increase in population which they have made both in the aggregate increase and in the percentage of increase, running in the case of Fort Worth to 174 per cent., give some conception of the sweep of city building activity throughout Texas based on the great development of its material interests, agricultural, mineral and lumbering. Readers of the MANUFACTURERS RECORD who have kept fully informed as to what Texas and these individual cities have been doing have not been surprised at their remarkable growth. But when we grant to all of Texas and to these four cities the praise justly due for their increase in population, they must still yield the palm to Galveston for having wrought more mightily than they. It is true that Galveston has 2 per cent. less population than it had when the census was taken ten years ago. The dry statistics that merely tell of Galveston's population in 1900 and its present population ought to be read in the light of the heroic struggle of Galveston following the great disaster a few months after the census of 1900 had been taken. By the side of Galveston's achievement the reconstruction of San Francisco, the rebuilding of the burnt district of Baltimore, the rebuilding of Chicago after the great fire, seem but child's play—the work of boys as compared with the work of men. In Chicago and San Francisco and Baltimore there was a great loss of property—millions of dollars in value were swept out of existence—and in the case of San Francisco the destruction of the earthquake was appalling, but Galveston, after the night of the fearful storm that beat and battered about it, found that about 8000 to 10,000 of its people, or one-third of its total population, were dead. Other cities had no such loss of life. It was a question for some months with many people in and out of Texas as to whether it would be possible for Galveston to be rebuilt. Many thought Nature had sealed its destruction, but

the men of Galveston rose superior to the disaster, faced the awful ruin of the storm, the death of one-third of its people and the destruction of a large part of its property, and not only determined to rebuild their city, but to rebuild it in such a way as to make its future safe against the fury of the gale. They have done so. They have practically regained all of the lost population, and so largely have they developed the commerce of that city that the foreign export trade of Galveston now exceeds by \$25,000,000 a year the combined foreign exports of San Francisco, Portland, Seattle and every other port on the Pacific Coast.

What Galveston has achieved should be an inspiration. In the light of its work no city in the country has a right to feel that any great business achievement is not within its power.

NEW ORLEANS AND THE PANAMA EXPOSITION.

The South should not lose sight of the fact that it is pre-eminently important for this section that New Orleans should be selected by Congress as the site for the Panama World's Fair. If New Orleans is willing to bear the burden of the work, and if New Orleans and Louisiana are willing to assume the great financial obligation of financing this undertaking, even though it involves the putting up of \$7,000,000 or \$8,000,000, surely the South should bend every energy to the heartiest co-operation with New Orleans.

There is not a business interest in the South that would not be affected by the selection of New Orleans. There is not a railroad in this section but what would be vastly benefited not only by the immediate travel, and that would be of relatively small importance as compared with the very great development which would follow as a result of the exposition, but by the expansion for all time to come of Southern trade and travel. Every merchant and manufacturer in the South, every property-owner, is interested in this situation.

It behooves the South to bestir itself to cultivate throughout every social and business acquaintanceship in the West and the North an interest in New Orleans as the site for the Panama Exposition. The mere passing of resolutions by boards of trade or other commercial bodies, or city councils, will not count for much; active, vigorous, untiring work alone will tell.

Will the South stand behind New Orleans in its contest with San Francisco? This exposition would be worth a thousand conventions or congresses. It would mean something tangible. San Francisco, with its vast wealth, will be backed by the whole Pacific Coast; it will put up a fight worthy of the people who have developed that section. What will the South do? The South should win. It must win.

BIG REAL ESTATE DEALS.

Indicative of the magnitude of real-estate operations in Birmingham are the purchase by the First National Bank Building of that city of the office building in which it now has an office for \$1,000,000 and the loan by the New York Life Insurance Co. to Mr. W. H. Woodward of Birmingham of \$1,000,000 secured by mortgages on two Birmingham buildings. This loan is said to be the largest one ever made on Birmingham real estate.

These deals are possibly a part of plans which are being worked out for the building of a million-dollar hotel in

Birmingham. Few of the enterprising cities of the South need a first-class hotel more than does Birmingham. Its early construction will add greatly to the attractiveness and the progress of that thriving city.

THE STAKE OF FOREIGN STEAMSHIP LINES IN IMMIGRATION.

During the last 10 years nearly 1,800,000 people from Sicily and other parts of Southern Italy have come to the United States. The immigrant fare from Italy to the United States runs from \$38 to \$40.50. At \$38 a total of over \$68,000,000 would have been received in 10 years by steamship lines from the Southern Italians brought to this country. As many of these people, when once they have made such a move as that involved in coming to the United States, become occasional travelers, going back to Italy in times of industrial depression and for family visits, it is probable that the aggregate travel between the two countries developed by the bringing of the 1,800,000 people has been at least 2,500,000. At \$38 a trip this would aggregate in 10 years \$95,000,000 as the gross amount which this travel has been worth to the steamship lines that handle the immigrant business from Southern Italy. In view of such enormous figures, is it surprising that these steamship lines are tremendously interested in developing the immigration business and in encouraging the South to welcome the Southern Italian? With such a sum at stake, why should they not spend money, viewed from their standpoint, in maintaining agencies in Washington and elsewhere to encourage their plans, even though their plans do not always appear in the open? Why should they not do everything in their power, and under every guise possible, to lay their plans looking far ahead, not simply to the present, but for years to come?

But the South should be on its guard. It does not want to be made a dumping-ground for these people. It does not want to give encouragement to any of the work of the steamship companies which may be interested in providing money for carrying on "Southern" campaigns of any kind from Washington or from New York.

SHREVEPORT'S OPPORTUNITY TO BENEFIT THE SOUTH.

Continuing his series of articles about the developments made possible in the South through the great supplies of natural gas and oil and raw materials for manufactures, Dr. David T. Day of the United States Geological Survey, in this issue of the MANUFACTURERS RECORD emphasizes the need of the establishment in the Shreveport gas region of a caustic soda plant. The new Chamber of Commerce at Shreveport, although only organized a few months ago, has already shown evidences of a vigorous campaign for new manufacturing enterprises. Already it has secured a reduction in the wholesale price of natural gas, and has succeeded in bringing to the city two new industries. It may now well give its attention to Dr. Day's article dealing with the prospect of introducing the manufacture of caustic soda, liquid chlorine and bleaching powder by the electrolytic method. The establishment of such an industry may well be urged not simply because of its local influence, but because of its broad effect through the beginning of that development on the chemical possibilities of the whole South. As out-

lined by Dr. Day, there seems to be a temptingly large margin of profit in the enterprise, but its greatest importance lies in the experience it will give in developing large electric currents, for which there are dozens of other electro-metallurgical uses which will be treated in subsequent issues by Dr. Day. Further, cheap caustic soda is a deciding element in bringing other industries South. With its aid crude cottonseed oil will be refined at home, and what this means as an improvement upon lard can best be understood by those who have noted the radical improvements in making cooking oils. This late improvement has been a Southern enterprise from the beginning, and its development on a very large scale depends upon cheap soda at home. Further, the production of the purest cotton oil for cooking means a larger portion of the refuse oil left behind in the manufacture. It is high time all of this was being made into fine toilet soaps in the South. At this time the eyes of the country are also turned to Shreveport to learn what the new movement for conserving the waste gas is going to effect. Without stopping this waste, no manufactures will permanently succeed. It is up to Shreveport to do a great thing for itself and for the whole South.

WHO CAN BEAT IT?

The *Dallas Spirit*, a monthly publication of the Chamber of Commerce, sums up the business development of Dallas, Texas, as follows:

Progress for 1910—first eight months:
\$8,000,000 worth of new buildings.
\$3,000,000 for civic improvements.
\$100,000 raised for Southwestern University.
Employment of city plan expert.
Union depot ordered by Railroad Commission.
Campaign started for new postoffice.
Secured natural gas for city.
221 new firms started in business.
Decorative lighting system for Elm street.
The new buildings include:
Twenty-story hotel, to cost \$1,000,000.
Eight-story, Sanger Bros.' department store.
Eight-story, Butler Bros., to cost \$1,600,000.
Twelve-story, Southland Life Insurance Co.
Twelve-story, Titche-Gottlinger Building.
Twelve-story, Southwestern Life Insurance Co.
Civic improvements include:
Twenty miles of street paving.
More artesian wells.
New City Hospital.
Sewage-disposal plant.
Deep sanitary sewers.
Additional schoolrooms.
Concrete viaduct over Trinity River.

Dallas is fairly typical of what is going on throughout the South. Everywhere is heard "the music of progress, the roar of the furnace, the whirr of the spindle, the buzz of the saw and the throb of the locomotive."

The story of what Houston is doing, with details about the great Rice University, with its present endowment of \$7,000,000 likely to be largely increased by the enhancement in the value of property and the plans for beginning the construction upon 40 buildings to comprise the university plant, is told in special correspondence from Houston in this week's issue, graphically illustrating the great progress of Texas, for what Houston is doing is typical of what the whole State is doing.

But do you suppose we will ever get rid of hookworm as long as Mr. Rockefeller is willing to foot the bill?—*Durham (N. C.) Herald.*

Never. And if we did, some new disease would be invented to justify salaries and to create the impression that the South is an unhealthy country. How long, how long is the South going to be willing to accept charity and pose as a Lazarus?

The Knoxville Exposition: Its Work and Worth.

[Special Correspondence Manufacturers Record.]

Knoxville, Tenn., September 22.

The significant thing about the Appalachian Exposition, which is on from September 12 to October 12, is the fact that not only have the local people of Knoxville and vicinity financed the enterprise, representing an investment of some \$500,000 all told, but that they have committed themselves to an annual recurrence of the exposition for 10 years in succession. The educational effect of one such exposition as is being held here now would be of great benefit to all this region of the South, and to much of the country besides, but with 10 years' consecutive effort the persistence and reiteration of this work must give it in time a power and momentum of tremendous influence.

There is a snap and go about the enterprise that betoken the energetic forces behind it. In illustration of this the beautiful, substantial administration building 150x350 feet, and two stories high, was built in six weeks, and the Knox county building, also a well-built, permanent structure, was finished in three weeks. Although at the last there was considerable pressure of haste, it was possible to present everything complete and fit for the opening day, and there certainly is rare charm in the picture presented.

The site is hilly and wooded, with road-lined lakes and lagoons. About 100 acres are utilized by the exposition company, which took a 10-year lease on Chilhowee Park, the property of the Street Car Co., and added somewhat to that tract by purchase. The main building fronts the upper lake and is a most attractive dominating feature of the exposition picture. Its classic outlines are pleasingly shown in chaste white, softened and glorified at night by a myriad of electric bulbs. The other principal buildings, well placed to preserve the effectiveness of the picture, include the forestry building, woman's building, marble bandstand, Knox county building, coal building, negro building and sheds for stock exhibits.

There is a picturesque array of "fakirs" and "midway" folk, with all the amusement features that go with the exposition and the county fair.

There has been a remarkably good attendance from the first, and many of the visitors have come from surrounding parts, as the railroad trainmen will testify in perturbed fashion. The first week's attendance is given unofficially as nearly 70,000. Should there be anything like an average attendance of 10,000 a day it will be a great record and make of the enterprise a very profitable undertaking. However, the enterprising people having the matter in hand are in for a campaign, and there will be no change of program, whether this year shows a surplus or a deficit.

The exposition is the outcome of persistent efforts made by W. M. Goodman, secretary of the Knoxville Commercial Club, and director-general of the exposition, who first began agitating the matter of an exposition on the present site some 10 years ago. When the secretary finally procured a public fund of several thousand dollars for the advertising of Knoxville, two years ago, with results satisfactory to the subscribers, the way was opened for the exposition, and the capital stock required was soon subscribed, and the exposition company was organized one year

ago. The leading business men of Knoxville took part in the organization of the company and in pushing the enterprise, the president being W. J. Oliver, known throughout the business world for the magnitude of his contracting operations and his ability as manager of great enterprises.

The principal themes of the exposition are demonstrative and educational. Knoxville, with some 80,000 population, is a great jobbing point, distributing through its 53 wholesale houses about \$50,000,000 worth of goods a year. Shoes come from Lynn by the railroad, for instance. Knoxville is also a large manufacturing center in wood, iron, marble, textiles, flour and feed, the annual value of the manufactured products being about \$25,000,000. To plan the exhibits so these facts might be impressed on the people of the South as well as those abroad was one of the objects aimed at.

Another and dominating object was to make the most complete possible exposition of the timber, marble, minerals and water-powers of the Appalachian range, for the double purpose of securing their proper development and their conservation or their use and not their waste. This feature of the exposition particularly appealed to Mr. Goodman, and the forestry building is the result of his enthusiasm. It is filled with specimens of all the merchantable timber found in the Appalachians; with all the minerals and marbles and with pictures, models, etc., of soil conservation, forestry methods and kindred matters. The local exhibits are supplemented by a large number of specimens belonging to the United States Government. Mr. Goodman, without a cent of donation, got together the local forestry exhibit, and Don Carlos Ellis, who is in charge of education, United States Forestry Service, got together and brought here the Government exhibits. They are from the collection the Government showed at the Seattle fair, in charge of Mr. Ellis.

Specimens of woods in the rough, partly dressed and with polished surface are shown; there are several county displays of striking character, showing the variety and beauty of native hardwoods; there are exhibits of the old and new methods of turpentine trees, the new or cup method being vastly more economical and beneficial to the forests and the industry, and now in use in every State except North and South Carolina; there are views of forests properly treated, so they may reproduce, and of those allowed by fires and ruinous methods to become barren wastes. A striking demonstration with a live model is given of the effects on hills and mountainsides, valley lands and water-courses of denuding the lands of timber and vegetation. On precisely similar soil there is a gulley-washed barren waste on the one hand, where the water quickly runs off into muddied streams, while the adjacent hillside, covered with trees and vegetation, absorbs the moisture and filters it into streams of perfect purity.

The relative strength of timbers and the effect of creosote and other preservatives on the life of timbers is shown in demonstration. There is a complete exhibit of raw material and manufactured product from the immense plant of the Champion Fiber Co., Canton, N. C. The Southern Extract Co. of Lonsdale, Tenn., has an exhibit of tannic acid, with the chestnut, red and chestnut oak materials from which the extract is made.

On the grounds about the forestry building there is a demonstration of Government methods in forestry, showing how

forests are posted, how kept cleared of dangerous brush and how brush is piled for safely burning.

In the building are numerous placards or mottoes indicative of the importance Mr. Goodman attaches to this work:

"Forestry is the management of forests in such a way that they will produce the maximum present supply consistent with their preservation as forests" is one of the mottoes. Others are:

"In 15 or 20 years, at the present rate of cutting, the timber industry of the South comes to an end—if nothing be done to prevent it."

"The possession of the South's forests is a noble heritage. It is the difference between a smiling and fair land and a desert."

"A billion tons of soil, worth a dollar a ton, is washed into our rivers annually from treeless slopes."

"The Appalachians must be the sole dependence of the nation's future hardwood supply."

The mineral display in the forestry building is a very complete exposition of the many ores, marbles, precious stones, etc., found in the Appalachian range, some of which do not occur elsewhere. A very interesting demonstration is the manufacture of Wellshach burners from monazite, and the Nernst lamp from zircon, rare North Carolina minerals. There is a large display of iron ores from North Carolina and Tennessee, coal, granite, etc., and an excellent display of Tennessee marble. It is a fact not generally known, I believe, that Tennessee marble is becoming very popular for statuary purposes. It is so much denser than ordinary white marble that acids and rains do not discolor it. The figures in the frieze of the New York custom-house are of Tennessee marble, and it is being employed by artists for statuary and monument purposes all over the country. The marble industry around Knoxville is developing at the rate of about 10 per cent. increase yearly, the value of the product now being about \$2,000,000.

Kentucky and Tennessee coal companies, more than 30 in number, combined to erect a house made of coal, located near the forestry building. The average analysis of the coal used in the territory is: Moisture, 1.49; volatile matter, 38.82; carbon, 58.09; sulphur, .60; B. T. U., 14,930.

On the grounds near these buildings there are sawmills and machines in operation, and throughout the exposition there is a tendency toward live exhibits instead of dead machinery.

Thus in the main building there are engines at work, machinery in operation and manufacturing being carried on. The cotton and textile industries of Knoxville are important, there being 103,000 spindles and 1550 looms, which work 3000 hands and turn out \$2,000,000 worth of products a year. The exhibit of these industries include not only a great variety of the manufactured woolen and cotton cloth, but looms in operation.

Knoxville makes 3000 barrels of flour and 2500 bushels of cornmeal per day, so there are "going concerns" in the flour and cornmeal lines.

Knoxville's industries are well represented in all lines. The mantel makers of Knoxville are creditably represented in the displays of White and of King. Knoxville has become the greatest hardwood mantel center in the country, one house turning out 100,000 a year, which are disposed of through various agencies and sold all over the country and in England and Mexico and other foreign places.

The Whittle Trunk & Bag Co. has a large line of goods, "made in Knoxville."

The W. J. Oliver plow is an interest-

ing Knoxville product, shown for the first time at an exposition. To his already large plant, where he has for some time been making steel dump cars, Mr. Oliver recently added a factory for making plows, on models invented by a Knoxville man, which include a reversible plow for hillside or level land plowing. There are other palpable improvements in the model, and an industry somewhat along the line of the original Oliver plow of South Bend is expected to be built up here.

In the building and on the grounds there is a variety of agricultural implements, farm machinery, farm and road automobiles, engines, road-making machines, etc., from various outside dealers and makers. A good deal of attention will be paid to road-making, the United States Government having a complete set of models of machinery and complete roads in miniature in the main building, while on the grounds actual good roads will be constructed. It is expected that an era of increased good-road activity throughout the section will be stimulated by the attention given to this branch here.

There are exhibits of Knoxville-made brick, cement and cement construction machinery. The Southern Cotton Oil Co. has an exhibit and demonstration booth; a sack-filling machine in operation from the R. J. Reynolds Tobacco Co. of Winston-Salem, N. C., and altogether the variety of exhibits is extensive and of general interest.

Railroad displays are made by the Louisville & Nashville, Southern and Norfolk & Western, consisting of exhibits of minerals, products of the soil, etc., from the Appalachian section of their lines. Attendants are on hand to furnish information and literature, and these booths are always the center of attraction.

In the main building there is also a very creditable art department, where an extensive exhibition is made of oil paintings, water colors, prints and photographs, some by local artists and others by artists of Washington and New York.

There is an extensive exhibit from schools and colleges, a particularly interesting one being the lathes, tools, machines and patterns made by students in the shops of the mechanical department of the University of Tennessee at Knoxville.

There is a separate woman's building, filled with specimens of domestic manufacture and art, and the headquarters for a number of events for women which will occur during the exposition.

A negro building gives an interesting exhibition of the progress made by negro men, women and children in education, industry and domestic knowledge.

Buildings have been provided for stock shows, poultry exhibits, bench shows, etc., and an advance in the quality of stock raised in this section is a result expected from this department's operations.

Aviation is a department of much interest, it having been arranged for flights with dirigible balloons, as well as aeroplanes, among the events secured for the occasion being a demonstration of the Wright aeroplane.

Concerts by bands of national fame will be given throughout the month of the exposition in a \$20,000 bandstand of marble, contributed by the marble men of Knoxville.

There will be special days throughout the entire time of the exposition, and until its closing, October 12, appealing to many varied interests. That the exposition as an annual event will be the radiating point for influences of great benefit to not only Knoxville, but the entire Appalachian section, the success of the present venture seems abundantly to prove. The people of Knoxville have done themselves proud.

ALBERT PHENIX.

NOTABLE ACTIVITY IN BUILDING AT HOUSTON.

[Special Correspondence Manufacturers Record.]

Houston, Tex., September 15.

No part of the United States is showing a greater building activity than the South. Hardly anywhere is there more being done in this line than in Texas, and at the head of development in this line Houston easily leads.

About \$4,000,000 worth of buildings have been constructed here during 1910. They are buildings of the best sort—steel frame, concrete construction, skyscraping and equipped with all modern conveniences, so that the Houston of today presents a sky line of massive, magnificent buildings, the like of which can hardly be

will be required. In taking a candid view of the situation it would be well enough for all of Texas to recognize the fact that in present building activity and prospective industrial growth Houston occupies a position peculiar to itself.

In addition to the \$4,000,000 worth of magnificent and modern buildings erected during the past year, there are in contemplation buildings to cost at least as much, work on which will probably be begun during 12 months from the present date. The most important prospective structure here is the hotel to take the place of the historic, time-worn Rice Hotel. No authori-

what this project means in an educational way, not only to Texas, but to the entire South. Casual readers know only of Wm. M. Rice as the victim of an extraordinary tragic plot to divert his great fortune from a life-long purpose to found a great educational institution in Houston. The life of Rice was prematurely sacrificed, but his magnificent bequest emerged undisturbed. At the present time there is an estate valued at more than \$7,000,000 available for the purposes of the Institute. The property is increasing in value all the time, so that the Rice Institute stands out as one of the most richly-endowed institutions in the United States.

A tract of 320 acres contiguous to Houston has been secured by the trustees, and the work of constructing here one of the great colleges of the United States is already begun.

Only the merest outlines of the plans and purposes of this institution can be referred to here, and for the purposes of this article, which is intended to give some idea of building construction in Houston, a description of the buildings already under contract will suffice. Even an outline of the full plans and purposes of the trustees in the development of the idea of a great institute here would require in elaboration much more space than this article contains.

For the present there are to be constructed an administration building, mechanical and electrical engineering laboratory and power plant. The administration building is to be 300x60 feet, three stories high, with a tower 80 feet above ground, 54 feet square. The administration building is to be utilized for college purposes until other buildings are completed; after that it will be an administration building pure and simple, in which will be the offices of those who direct the college.

The contract for the construction of this building has been let to Wm. Miller & Sons

pleted there will be something like 40 buildings on the plot, and the style of architecture of the administration building is intended to provide the dominant tone for the architecture of the entire group.

The administration building will have marble floors, vaulted ceilings, brick walls and piers, with partitions of United States gypsum hollow tile blocks, metal casing windows of Birmingham (England) manufacture, bronze balconies and bronze grill-work.

The mechanical and electrical engineering laboratory building will be two stories in height, of the same general style, and in the interior the same general scheme will be carried out. The building, however, will be more largely of brick. It will be of concrete construction, with a dark red tile roof and with terrazzo floors. The size of the building is 200x40 feet. Behind this is the machine shop, 38x70 feet. Back of these is the power plant, steel construction, with brick walls, 100x60 feet. These buildings will all be connected. The general contract for the entire building will be awarded within a short time. Plans for the contract for machinery will be ready about October 1. Four boilers will be required to furnish power, which will supply the entire university with light, heat and water. There will be engines for developing electric power, light, etc. The machines, lathes, etc., for the mechanical laboratory will be covered by a later contract.

Cram, Goodhue & Ferguson of Boston and New York are the general architects for the entire institution. W. W. Watkin is the local man in charge of the work from the beginning to the finish. It is the expectation that the buildings under contract will be completed in time for the college year of 1911-12, and it is the purpose of the trustees to proceed with other development work as fast as additional buildings are required. Dr. Edgar Odell Lovett, for-



CARTER OFFICE BUILDING, HOUSTON, TEX.

found in a city of 100,000 inhabitants anywhere in the United States.

Texas has progressed wonderfully during the last 10 years. San Antonio, Dallas, Fort Worth and the little cities of the Panhandle and of the Rio Grande all have added to their population and to their facilities for doing business in a really notable way. The population of Texas has been increased at the rate of something like 200,000 a year throughout the past decade. The great cattle ranges and ranches of the Southwest have been cut up into farm tracts, and people from the outside world are settling on these tracts in enormous numbers.

San Antonio is expected to show up with a population of somewhere near 100,000, which will continue that city as the most populous city in Texas. Dallas will probably come next, with Houston as a third. However, there are but 16 square miles of territory covered by the city limits of Houston, whereas San Antonio has 25 square miles and Dallas considerably more than that. Outside the city limits of Houston there are several populous suburbs, so that the population which properly belongs to the city of Houston is stated by local authorities to be some 25,000 more than the 78,000 population given to Houston proper by the United States census enumerators.

San Antonio, Dallas and Fort Worth will all be very important commercial and industrial centers. There really is little occasion for a feeling of rivalry as to the preminence in population. The State is a big one, and several commercial centers

tative announcement has yet been made as to the plans of the syndicate having this matter in charge; however, it is an accepted rumor in Houston that Jesse H. Jones has secured a 99-year lease on the site of the Rice Hotel proper, and that it is his intention to construct on this site, and on property contiguous thereto within the same block, a magnificent modern hotel, to cost from \$1,000,000 to \$1,500,000. Mr. Jones is absent in the East, and no one in Houston is authorized to speak for him, but so persistent are the rumors to the effect that he has definitely arranged for a development along the lines mentioned that everybody in Houston expects the new Rice Hotel to be undertaken on the site of the present structure not later than six to twelve months from the present date.

Another important new building is that of the Union National Bank. Plans and details of this structure have not been determined on, and it is stated that not until some time later will anything definite be decided; however, according to present indications, a 12-story, steel construction office and bank building will be erected at a cost of about \$500,000. The site has been selected, and it has been decided to erect a building, so that only details are in the way of the beginning of actual work.

Outside of commercial buildings, and really of great civic significance and financial importance, are the plans and purposes of the trustees of the William M. Rice Institute. Very few people in Texas or elsewhere have any adequate conception of the magnitude of the Rice Institute and of

Company of Pittsburg and Houston. It is to be absolutely fireproof, and is to be of striking appearance. The architecture is of the early Venetian style, in which arches are the dominating feature. No other building in the United States will have the pictorial effects of this structure. There will be a harmonious commingling of pink Tennessee marble, pink Enfield brick, with the brick carried into the stone in the north of Italy style just prior to the Renaissance, and all trimmings and columns will be of imported marble in delicate greens and soft browns and reds, heavily mottled, forming a combination which will be striking and pleasing in the extreme.

When the Rice Institute is finally com-

merly of Princeton, who has been selected as head of the Rice Institute, spent more than a year in traveling over the United States and Europe in the study of universities here and abroad, and as the result of his investigations it is the expectation that the Rice Institute of Houston will be one of the notable educational institutions not only of America, but of the entire world. It will be a university, in fact as in name, where the student may obtain an education in classics, in science, in literature and also in arts, mechanics and manual training.

Excavation work for the foundation of the building to be immediately constructed has already begun, and work will be rapidly pushed to completion, with the under-



UNITED STATES POSTOFFICE, HOUSTON, TEX.

standing that all three of these buildings will be finished by September 1, 1911.

Excavation work has also been started for the Southern Pacific office building, which will occupy the site of the old Hutchinson Hotel, which burned down some 15 years ago, on the corner of Travis and Franklin streets. Plans have been perfected for the construction of a nine-story steel and concrete building 145x174½ feet. Wm. Miller, Sons & Co. of Pittsburg are the general contractors. The work is to be completed August 22, 1911. The cost of the building complete will approximate \$700,000. Six floors of the building will be for the use of the Southern Pacific Railway; three of the floors will be for rent, including the major portion of the ground floor outside of the space required for the ticket offices.

The exterior of the building will be of pressed brick. There will be fireproof partitions, reinforced concrete floors and general fireproof construction throughout. The building will have its own power and heating plant, and also refrigerating plant for drinking water fountains. There will be a vacuum heating and cleaning system installed. The building will have four elevators. The finish will be of hardwood, with glass partitions in the vestibules and anterooms. Altogether this will be a notable addition to the office buildings of Houston.

The Southern Pacific Railway is also completing a hospital for the Sunset Lines of Texas, which in its way is as notable as the office building. It is four stories high, with basement, of reinforced concrete construction and tile roof, and has every sanitary appliance. In plan of construction there is a central building with two wings, the modern pavilion plan, so that every room is an outside room. The building is constructed in accordance with plans approved by Dr. R. W. Knox, chief surgeon of the railway system of Houston, and it will be in the hospital line as good as the best anywhere. The Fred A. Jones Company is the general contractor. The cost completed will be \$120,000.

One of the most striking architectural additions to Houston is the new Government building, now approaching completion. It will be utilized as a postoffice and courthouse building. Its outside dimensions are 167x120 feet. It is three stories and basement, steel construction, fireproof throughout, reinforced concrete floors and terra-cotta tile partitions. The exterior is of a light-gray granite from Hallowell, Maine, the granite being shipped, by the way, from Maine to Galveston by boat. Jas. A. McGonigle & Son of Levenworth, Kans., are the general contractors; Walter I. Gideon, architect in charge. Cost of the building will be about \$400,000. It is expected that the building will be ready for delivery by January 1.

Another public building of interest is the Harris county courthouse, now nearing completion and already partly occupied. The cost of this handsome building is \$750,000 complete. The exterior is of Texas granite, combined with Texas brick from Paris, Tex. The construction is steel frame, columns and carrying beams, with plaster partitions of metal lath. The American Construction Co. was the general contractor, covering everything except plumbing, heating and wiring, which contract was awarded to the Keithley Plumbing Co. of Houston. Of striking appearance, the interior finish of this building is no less notable, the matched marble work of the interior being among the finest specimens to be found in the country. The interior marble was furnished by the Geo. V. Sickles Marble Co. of Tate, Ga. Lang & Mitchell were the architects, T. J. Caldwell, manager. Lang & Mitchell also have contract for Nacogdoches Grocery Co.

warehouse, 50x100 feet dimensions, four stories high, with basement, which is to be of reinforced concrete throughout, and which will cost about \$35,000. The excavations for this building have just been completed. W. H. Young of Houston has

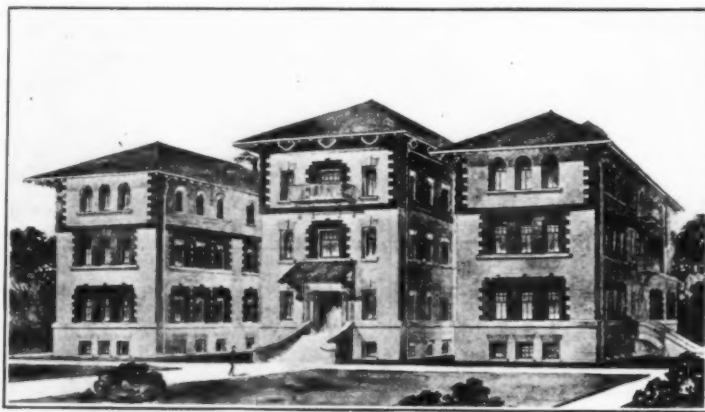
tially completed is the new terminal station now utilized by the Trinity & Brazos Valley, the Santa Fe, St. Louis, Brownsville & Mexico and Beaumont, Sour Lake & Western railroads, and into which the Missouri, Kansas & Texas Railroad will



SOUTHERN PACIFIC OFFICE BUILDING, HOUSTON, TEX.

the contract for the building. The location of this warehouse in Houston is a matter of some significance. The president of the Nacogdoches Grocery Co., Mr. John Schmidt, lives in Nacogdoches, and the decision to erect a warehouse of this

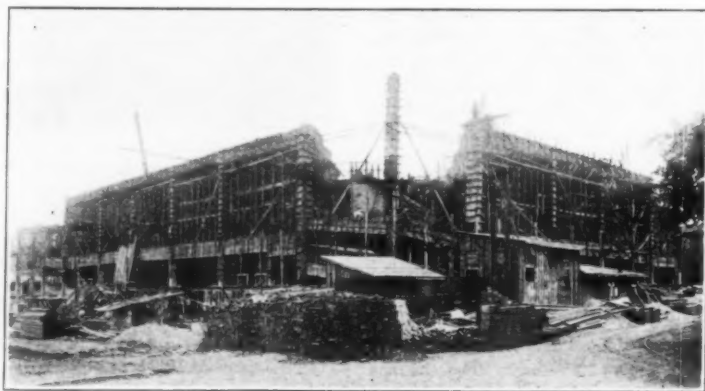
also run its trains. The terminal station is a part of a six-million-dollar investment made by these railroads in lands, yards, sheds, roundhouses, etc., occupying several blocks and practically in the center of Houston. The passenger station itself,



SOUTHERN PACIFIC HOSPITAL, HOUSTON, TEX.

importance in Houston indicates the conviction on Mr. Schmidt's part that Houston is a most advantageous location as a general distributing point. Lang & Mitchell also have the contract for the construction of a residence for Mr. Gus Radetzki, the general superintendent of the Houston

with train sheds for passenger service, covers a space of 250x1100 feet. The station proper occupies a space of 250x85 feet. The structure has a skeleton steel frame, with floors of reinforced concrete. The exterior has a base course of Texas granite, above which there are 32 feet of Bedford



CITY AUDITORIUM, HOUSTON, TEX.

& Texas Central Railroad Co. It will be 50x50 feet, two stories high, with basement, with heating apparatus and all modern improvements. John W. Pope of Houston has the contract for doing the work.

Another important public building par-

limestone, the balance of the exterior being of St. Louis pressed brick.

The building is designed for railroad offices, in addition to accommodations for passengers, and there are every kind of convenience to be found in the modern terminal railway station. An eating plant

will be established, also a pumping plant with two Worthington centrifugal pumps and two Laidlaw-Don-Gordon compressors, one of which will be used in pumping water and the other for testing airbrakes in the yards. Warren & Wetmore of New York city are architects for the building, represented locally by Paul D. Tallman. The American Construction Co. is general contractor for the work. The building will be entirely completed by February 1, 1911.

Of hardly secondary interest to any of the building operations in Houston is the municipally-constructed auditorium, now nearing completion at a cost of \$250,000 for the building alone. This is a very interesting municipal undertaking, in view of the fact that something like \$400,000 will be required for building, land and furnishings, the entire cost of which will be provided out of surplus funds without the necessity of any bond issue for the expense of the undertaking.

The building will be 150x255 feet, 70 feet high. It is entirely of reinforced concrete construction. Six thousand two hundred and fifty-nine chairs have been bought for the auditorium. As the aisles are unusually wide, it is estimated that 3000 additional persons could be seated in the building if occasion demanded. There are two galleries in addition to the amphitheater and private boxes. Ultimately the building will have a \$25,000 pipe organ, and there will also be installed a power and heating plant, as the funds of the city will warrant the expenditure. The work is in charge of the city engineer, F. L. Dormant, the general contractors being H. L. Stevens & Co. of Houston. Mauran & Russell of St. Louis and Houston are the architects.

While on municipal work it might be mentioned that the city has in course of construction a two-mile drainage sewer, on which \$160,000 have already been spent, the work being about two-thirds finished. This is known as the Austin street sewer. It will be two miles long, and at the largest end will be 11 feet in diameter, diminishing to 8 feet at its smaller end. It is so laid out that it can be continued as needed. It is presumed to be the largest drainage sewer anywhere in the country.

In addition to this work, \$225,000 is being spent for sanitary sewerage. This is a part of the bond issue which included also \$200,000 for wharves and slips at the turning basin, which work has been completed.

During the fall a contract will be let to build a 70-foot bridge 330 feet long, of concrete construction, on San Jacinto street, crossing Buffalo Bayou. This will be paid for out of the general fund. It will be paved with vitrified brick, and will have a lift of the Scherzer type.

During the fall elections a vote will be taken on a bond issue of \$500,000 for building a viaduct across Buffalo Bayou at the foot of Main street. This viaduct will be 60 feet wide and 1600 feet in length. It will have two reinforced concrete arches, 150 feet span, and will be reinforced concrete construction throughout.

At the same time the city will vote on an appropriation of \$1,250,000 to deepen the Buffalo Bayou to a depth of 25 feet from the turning basin to the Gulf. The United States Government has agreed to give an equal sum, and responsible contractors have expressed a willingness to undertake the work at a cost of \$2,250,000 maximum and to finish the work within 20 months after the contract has been signed up.

The city is building a \$36,000 annex to one of the grammar schools out of the general fund. The city is also spending \$100,000 on street improvements, paving with brick and shell, and on the shell is using a liquid asphalt that makes practically an asphalt street at a cost approximately of

six cents a square foot. From the way streets treated in this manner are now wearing here and from reports receive from elsewhere it is believed that streets treated in this way will last as long as asphalt streets, and it is considered that this plan of street paving solves the problem of treating streets not subject to heavy traffic. The asphalt is a residue from the oil refineries, and its accessibility and cheapness greatly recommend it for use in this vicinity.

The municipality has just completed a garbage crematory. It is of the Thompson furnace plan, of reinforced concrete construction, and cost \$6500. It is reported to be operating with complete success, the incineration method being the plan adopted. Engineer Dumont is working now on plans for a reservoir of reinforced concrete construction covering 46 acres and having a capacity of 60,000,000 gallons. This is to supplement the present water-works of the city. The plans will not be finished before some time next year.

One of the important Houston buildings on which work is now being done is the Bender Hotel, a 10-story structure 100x125 feet, to contain 320 rooms and to cost about \$500,000. It is to be of steel construction, fireproof steel studding and lath partitions, reinforced concrete floors, terra-cotta and brown and red brick exterior, with granite base and columns. The Fred A. Jones Company has the general contract. The Houston Structural Steel Co. is making and furnishing the steel. The terra-cotta is from the Northwest Terra-Cotta Co. All the contracts have been let except the wiring. It will be finished in November, 1911. A power and light plant will be installed, contracts for which will be let later on. C. D. Hill & Co. of Dallas are the architects. E. F. Glick, local representative.

The same firm of architects has just opened bids for a Christian Science Church 55x100 feet, to cost \$40,000. It will be of classic design, with Roman doric columns, brick, stone and terra-cotta exterior, and work of construction will begin the latter part of September.

The same firm has also finished up, at a cost of \$25,000, a fireproof reinforced vaudeville and picture show theater. It is 60x125 feet, with seating capacity of 850 people.

The same firm has just let a contract to C. C. Winzel for a fireproof wagon and carriage factory 100x100 feet, five stories in height, brick walls, mill construction, to cost \$50,000 complete.

Sanguinet, Staats & Brown, architects, of Dallas and Houston, are finishing up a number of very important buildings. One of these is the Carter office building, 102x103 feet, 17 stories high, steel frame, with concrete floors and red granite, Bedford limestone, terra-cotta and Kittanning brick exterior, at a cost of \$600,000. This will be one of the handsome office buildings of the South, the corridors being wainscotted with Alabama white marble, the stairs being of reinforced concrete, with marble treads and risers and ornamental iron rail, the trim being of hardwood. The building will have its own power plant for lighting, heating and elevator service, four Otis elevators being contracted for. Wm. Miller's Sons Company of Pittsburgh is the general contractor, the Peters-Eichler Company of St. Louis having contracted for power plant.

The same architects are building the Rossonian Apartment-house, seven stories high 190x140 feet, costing \$320,000. This building, which is nearing completion, will be one of the most modern and up-to-date apartment-houses in the South. It will have a refrigerating plant, roof garden, cafe, and will have its own power and

lighting plant. The Fred A. Jones Company is the general contractor.

The same architects also are finishing up the First Methodist Episcopal Church, which will cost \$150,000. The exterior is of gray St. Louis pressed brick, with terra-cotta and Carthage limestone. The walls are of solid masonry, with steel beams and columns. A feature of the interior will be that all rooms can be thrown together, giving a seating capacity of about 2000, which is the largest of any church in Houston.

The same architects are also constructing a six-story reinforced concrete warehouse for the Bering-Cortes Hardware Co., 73x128 feet. It will be used for both retail and wholesale purposes by this company. James Stewart & Co. have the general contract. The plumbing, heating, lighting and wiring contract not yet let. The cost of the structure will be about \$100,000.

These architects also have in hand a \$16,000 residence for E. W. Sewall.

Up-to-date warehouse construction is one of the notable features of building operations here. One of recent construction is that of the James Bute Company, 100x200 feet in dimensions. It has four floors and basement, which is 120x220 feet. The basement and first floor are reinforced concrete exterior walls, with brick curtain walls. The other floors are of mill construction. This is used as a paint warehouse, and is the largest paint warehouse in this part of the South. The building cost \$100,000. It is equipped with a sprinkler system, and has fire partition walls.

The Scanlan warehouse is another notable warehouse. It is 118x143 feet in dimensions, six stories and basement. It will be of first-class mill construction, of brick exterior and division walls. It will have two freight elevators with speed of passenger elevators. They will be enclosed with iron doors and approved by the Fire Underwriters, and the stairs will be enclosed with brick. B. H. Lichter & Co. are the general contractors. It is of interest to note that these contractors are the builders of the Scanlan office building, and are also the builders of the State Capitol at Austin.

In addition to these important buildings, there are a number of residences and flat houses under way or in contemplation, while some other projects have not passed the point of preliminary discussion. What is actually under way and definitely decided on, however, gives to Houston a degree of building activity very notable for a city of Houston's size, and it gains significance and importance when taken in connection with building operations that have been completed in the very recent past. Within the last 12 months there have been erected buildings of approximately \$4,000,000 value, including several skyscraper office buildings, newspaper and office buildings, bank building and one of the most beautiful and thoroughly complete theater buildings found in the United States.

The building operations of Houston for the past two or three years, in magnitude and in the quality of the structures, would do credit to a city of several times the population Houston shows.

ALBERT PHENIS.

Morris & Co. to Build in Texas.

That Morris & Co. of Chicago will build another large packing plant in Texas is indicated in a dispatch from El Paso, which quotes the company's Western manager, W. N. Pence, as saying that the company will have a million-dollar plant in operation within a year. His company has just purchased 1,250,000 acres of land in Mexico for cattle-raising.

TO DRAIN 120,000 ACRES.

Round Up of Plans for Lake Mattamuskeet, in Carolina.

[Special Cor. Manufacturers Record.]

Raleigh, N. C., September 24.

At last the final arrangements are being made for the greatest drainage scheme ever known in this part of the country, involving 120,000 acres of land as rich as that in the Valley of the Nile. The Legislature made provision that the State could expend \$300,000 on the drainage of Lake Mattamuskeet, in Hyde county, and that landowners holding the land around the lake, amounting to 70,000 acres, could expend \$100,000 on the consolidated scheme. Governor Kitchin this week called the council of State to consider this matter, and the clerk of the Superior Court of Hyde county is notified to make the necessary orders, so that work can begin within the next 60 days and be pressed to completion. Governor Kitchin and council of State have received the official reports from the United States drainage experts, showing that the sum above provided for is ample to do the work thoroughly. The viewers have also submitted their reports and estimates of the value of the reclaimed lands are in hand. The latter reports show that the land now covered by the lake will be worth from \$100 to \$200 an acre. No clearing will be necessary for this, of course, and it will be directly available. Of the circumjacent lands a good deal will have to be cleared, but they are nearly as fertile. During the coming winter the work is expected to be in full progress, and, of course, considerable machinery will be required. The State has graded a railway almost entirely around the lake, convict labor having been employed in the grading. This week the grading was completed to Belhaven, and the council of State will soon pass upon the question whether it shall be extended from that point to the town of Washington. The county of Hyde is one of the most fertile in the United States, and adjoins the almost equally rich county of Beaufort, where very extensive private drainage work is in progress, and where large sales of drained lands are being made, some to persons from other States.

The State grants a charter to the Mica Belt Mining Railway, which is all in the very high mountain region of Mitchell county, in the Alta Pass section, and which will make a loop of 15 miles from the Carolina, Clinchfield & Ohio Railway, tapping some of the largest mica deposits in the country. The Alta Pass section, by the way, is becoming quite notable, and that will be a prominent place on the great mountain highway which is to be constructed to Asheville. Alta Pass is made the county-seat of Mitchell county, the former one having been Bakersville, a village which has been very remote and through which a swift stream runs, which some years ago destroyed several buildings and caused the loss of some lives.

The secretary of the Raleigh Chamber of Commerce is sending great numbers of invitations to people who have moved from this State to other sections to come to Raleigh and North Carolina during Homecoming Week, October 17-22, taking advantage of homeseekers' tickets from the Middle West, for which the rates are very low indeed. All the railways are co-operating in this effort to bring not only ex-North Carolinians here, but other people from that section. North Carolina only needs to be looked at to be liked.

The annual report of the Raleigh Cham-

ber of Commerce has been issued in leaflet form, and is very attractive. It shows that the State buildings and their contents here are worth \$2,500,000, and the lands attached thereto \$1,000,000 more. The total value of building and street construction and improvement at this date is \$1,115,000. Raleigh is unique among the State capitals because of the fact that the parks and streets are all owned by the State, which bought the site for the city in 1792, a commission created by the Legislature making the purchase. In every way the report is gratifying. There are 20 schools, with over 8000 students; seven banks, eight textile mills, an electric plant and equipment which has cost \$2,500,000, and which is now doubling its power; an increase in the valuation of city property amounting to 25 per cent. in the past three years.

The report of the Corporation Commission on the railways in North Carolina has been prepared, but will not be published until this winter. There are 51 railways in the State, the total mileage being 5400. In 20 years the mileage has been almost exactly doubled. This only refers to roads in operation. There are five now under construction, the most important of these being the Southbound, which the Atlantic Coast Line and the Norfolk & Western are building jointly, the completion of this road having been delayed somewhat by quicksand.

The value of the Atlantic Coast Line Railway in the State, as assessed by the commission, is \$27,777,081; Seaboard Air Line, \$12,365,946; Southern Railway on its owned lines \$17,190,110, and on its leased and otherwise operated lines \$16,402,053. By far the most important of the leased lines of the Southern is the North Carolina Railway, very largely owned by the State and controlled by it, and which is 224 miles in length between Goldsboro and Charlotte. The Corporation Commission assesses its value at \$10,450,712. The miscellaneous roads, 47 in number, are assessed at \$15,900,000, the most important being the Norfolk & Southern, which is put down at \$5,000,000, the Carolina, Clinchfield & Ohio being assessed at \$626,824 and the Norfolk & Western at \$1,522,344.

The North Carolina Electric Power Co., with headquarters at Asheville, has under construction an additional power plant on the French Broad River, two miles below Marshall, and very near the Tennessee line. This plant is intended to generate 4000 horse-power, the construction to be such that the power can be increased upon need. It is expected that the plant will be completed by January 1. The power from this plant will be carried by wire up the French Broad River to Craggy, and will thence be carried to the great wood-fiber plant at Canton, which is one of the largest in the country. There will be enough current to furnish power to other plants. The line may be extended to Clyde, Waynesville and the grounds of the Southern Assembly. There is a notable interest in hydro-electric power in that section, where so many thousands of visitors from the far South spend the summer and early autumn, creating a demand from hotels, boarding-houses and country homes for electric lighting.

The fact that a quarter of a million people have this summer visited the North Carolina mountain regions, and that Asheville is the base point for a very large proportion of this travel, has brought up the question of the lack of enough hotel accommodation at that point. The Southern Railway controls the situation there, as its lines are the only ones in that part of the State, and hence its chiefs are very anxious to have at least two very large hotels built at Asheville.

The Proposition of Manufacturing Soda by the Electrolytic Method at Shreveport.

By DR. DAVID T. DAY of United States Geological Survey.

[Written for the Manufacturers Record.]

A carload of 20 tons of rock salt will cost \$30 delivered in Shreveport. This will yield eight tons of caustic soda, worth \$300, and 12 tons of liquefied chlorine gas, worth in St. Louis or Denver \$2700, or in all \$3000. The difference between the cost of the salt (\$30) and the value of these two products, just a hundred times greater, represents the cost of labor, supervision, electric current, interest on plant, containing packages and expenses of sales department and freight.

Since the process is carried on successfully at various points in the United States, especially at Niagara Falls, where the price of electricity probably is essentially greater than a profitable price at Shreveport, it is evident that the practicability of a profitable venture at Shreveport depends upon the cost for labor, the cost of supervision—that is, the expert skill in operating the plant—and upon the installation of a plant somewhat near as efficient as those now in operation.

The process itself is simple. It consists in decomposing brine by an electric current, by which pure chlorine gas collects at one pole of the decomposing cell and caustic soda at the other.

The "Cell."—What corresponds to the furnace in ordinary metallurgical operations is the cell in which the electrolysis of the brine takes place.

There are many forms of these cells, depending chiefly upon the means provided for keeping the two products from recombining after they are separated and carrying away these products to proper storage receptacles as rapidly as they are formed. They are well described in detail by Mr. Harry I. Wolfe in the *Western Chemist and Metallurgist* for April, 1910.

Among the prominent forms is the "Townsend cell," in which the chlorine and caustic soda are kept apart, after formation, by filtration through a diaphragm made of woven asbestos cloth painted with a special preparation of iron oxide, asbestos fiber and colloid hydroxide of iron. As soon as the saturated brine has been decomposed by the current the solution of caustic soda passes through the diaphragm and enters at once into a chamber of kerosene oil. It drops to the bottom of this into a small channel, where a siphon tube carries it off to a concentrating tank. Here the salt, which necessarily goes with the caustic soda to some extent, is removed by evaporation and is used over again. Meanwhile much of the salt has been decomposed, and the solution in the decomposition chamber would become too weak for efficient electrolysis except that the weaker brine constantly flows out and is replaced by saturated brine. By simple devices the weak brine is passed over rock salt and resaturated and returned to the cell again. Another simple automatic device regulates the speed with which the part of the solution in contact with the cathode, and which is more or less decomposed into caustic soda, filters through the diaphragm into the kerosene oil and out of the sphere of chemical action. The cell is covered and provided with tubes which convey the other product of the action, the chlorine gas, to suitable gasholders to be compressed to liquid chlorine in suitable cylinders, or, as is the more common practice, passed into

slaked lime to make bleaching powder or "bleach."

Many, of course, are the small details in the process which requires skill, experience and eternal vigilance, as in any other kind of manufacture. Such, for example, is the careful regulation of the current strength in order that greatest efficiency may be obtained. But experience in this regard since 1906 in working the process on the large scale at Niagara Falls has shown that 95 per cent. efficiency can easily be maintained, and that 97 per cent. can frequently be secured.

A great drawback to the manufacture of soda by this means, as explained by Dr. L. H. Baekeland in a paper before the New York section of the Society of Chemical Industry and abstracted in *Electro-Chemical and Metallurgical Industry*, is the tendency of the products of the process to recombine by diffusing together again in the decomposing cells. The result of this is not only that salt is reformed which must be decomposed again, but, worse yet, whenever chlorine acts upon caustic soda it forms not only salt, but hypochlorites, and even chlorates, and these, when decomposed again by the electric current, eat up the carbon electrodes by oxidation. But as the result of diffusing the caustic soda quickly through a porous cell wall into the kerosene the product is taken out of harm's way so effectively that the electrodes last for months. A delicate test of this was made by noting some needle scratches on the surface of some Acheson graphite electrodes, and these scratches were still to be seen after several months' use, and with no perceptible alteration. Even under the worst conditions the electrodes only require partial renewal after about one year of continuous work.

At the Niagara plant, where this process has been at work continuously since 1906, an average of five tons per day of caustic soda and 11 tons of "bleach" have been produced, and it is now proposed to multiply this plant by four. This is readily done by adding more unit cells until the desired capacity is obtained.

Much has been said about the possibly unfavorable effect of a warmer climate at Shreveport upon the efficiency of the process. In so far as the mere operation of the cells is concerned, this question of warmer climate is readily seen to be of no consequence, inasmuch as the cells can never be operated so efficiently but what their temperature due to electric conduction will be much higher than the surrounding atmosphere, in which many degrees one way or the other will not be noticed in the cell. On the other hand, the matter of atmospheric temperature is of the utmost importance in converting the chlorine into bleaching powder. It has been found by long experience that with a high summer heat bleaching powder cannot be made with anywhere near the efficiency of a cooler environment. The same is true of excessively cold weather, because of the formation in this case of crystalline hydrates of chlorine. There seems little difficulty, however, of working at Shreveport with little loss from such unusual temperatures. The chlorine may be sold as liquid chlorine during the hottest weather, and it should also be borne in mind that the idea of excessive heat in Shreveport is more or less of a fallacy when one compares this region with New York. Extremely high temperatures are, perhaps, as common in one region as the

other. The real difference is in the length of the summer season rather than in the height of the thermometer.

Cost of Plant.—A question of interest in considering the practicability of introducing this manufacture in the South is the item of original cost. This is not greater in the South than elsewhere. It is estimated by one authority that the total cost for a plant making one ton of caustic soda per day would be from \$25,000 to \$35,000. It is suggested, however, that the cost per ton decreases so rapidly as the output becomes greater that a plant with a capacity of five tons of caustic soda per day is the smallest that should be considered. Such a plant, including all accessories, such as bleaching-powder plant, will cost, say, \$200,000.

The electricity required for making five tons of caustic soda may be reckoned in this way: A single cell will produce 79 pounds per day, or 127 cells will be required for the daily product of five tons. This would mean 100 per cent. efficiency. If the average efficiency of 94 per cent. is assumed, and this corresponds with good practice, and 5 per cent. of the cells are idle, then 136 cells will be required, using 136,000 amperes at five volts, or 906 electric horse-power.

About 10 men are required for running such a plant, of whom half are unskilled labor.

Fifteen dollars a horse-power year is as cheap as electricity can be had at Niagara, and usually the rates the higher, save for exceptional contracts.

A serious objection raised against the production of electricity by burning natural gas in internal-combustion engines is the probable greater cost of upkeep. The writer's attention has been called to the great durability of the water-power plants, and the fear has been expressed that repairs and deterioration to the internal-combustion engines may prove too costly. On this question more will be said later, when a careful comparison of these costs can be presented. In the meantime, it is safe to say that granting greater durability for water-power plants, the margin with cheap gas will quite probably more than make up for the greater cost of upkeep with gas engines.

One must not lose sight of the great purity of Louisiana rock salt as a favorable element in the problem, for pure salt means smooth running and high efficiency.

Another favorable feature is the market which already exists for caustic soda in the South, and that which can easily be made if there is any advantage in the price at which it is offered. Not only is there the usual retail sale for soda lye for household purposes, but it is required wholesale in the purification of crude cottonseed oil and in the manufacture of paper from yellow pine timber waste. The potential demand for lye for soap manufacture can only be gauged by the amount of cottonseed oil, and especially cottonseed-oil waste, produced in the South and freighted north at a low price. There are few products which can do more to stimulate the introduction of other industries than caustic soda and sodium carbonate.

It is evident that the capacity of producing soda salts of all kinds is going to be increased in the United States during the next few years. It seems that the time has come for giving the Southern salt deposits a chance at the industry. From present indications it is probable that the present manufacturers will look very carefully into the question, and no more fortunate outcome can be imagined than the inducement of these skilled electro-chemists to spread out to the South, and by bringing their experience and a few of their skilled workmen to instruct Southern labor to insure success from the beginning.

The Birmingham Iron Market.

[Special Cor. Manufacturers Record.]
Birmingham, Ala., September 26.

While there has not yet been that improvement in the iron market looked for, indications would point to the fact that some of the furnace interests in the district have pretty well covered themselves with orders for several months ahead. One of the largest producers admits having sold the product of three of its furnaces through the entire year of 1910, and is only offering a limited quantity of certain grades for delivery during the first quarter of next year. The lowest base price is \$11.50 per ton for prompt shipment and nearby delivery. Inquiries are good, but the actual tonnage being placed is yet comparatively light. The charcoal iron market is fairly active. Prices are being maintained the same as for the past seven or eight months.

In sympathy with the pig-iron market, the water-pipe market is rather on a hand-to-mouth basis, and no material improvement is looked for until there shall have been enough activity in pig-iron to warrant a reaction. Following prices are quoted per net ton f. o. b. cars here: Four to six-inch, \$22; 8 to 12-inch, \$21; over 12-inch, average of \$20, with \$1 per ton extra for gaspipe.

There has really been not enough business transacted in the scrap market to establish list prices. About the following figures per gross ton here represent the market:

Old iron rails, \$13.75 to \$14.25.
Old steel rails, \$11.50 to \$12.
Old iron axles, \$16.50 to \$17.
Old steel axles, \$15.50 to \$16.
No. 1 railroad wrought, \$11 to \$11.50.
No. 2 railroad wrought, \$10.50 to \$11.
No. 1 machinery, \$10 to \$10.50.
No. 1 steel, \$9.50 to \$10.
Old standard car wheels, \$12 to \$12.50.
Light castings, stove plate, \$8.50 to \$9.
Mr. Ben Catchings, receiver of the Central Foundry Co., reports the repairs on the Holt furnace progressing. The stack will be in readiness to go in within the next 10 to 15 days.

The No. 2 furnace of the Birmingham Coal & Iron Co. at Vanderbilt is rapidly being put in first-class repair. The large four-log Central washer plant of the company at Tecumseh is at present turning out brown ore. It has a capacity of about 500 tons per day, and it will be the policy of the company not only to run the Baker Hill washer, but furnish considerable ore from the celebrated Baker Hill mines to supply the Central washer plant. The washer plant represents an outlay of something like \$45,000, and is the most modern brown-ore washer plant in the district, if not the South.

Faith in Education Proved by Works.

H. A. Camp, president of the Pole Stock Lumber Co., Hattiesburg, Miss., writing to the *MANUFACTURERS RECORD* in regard to the progress that is being made in his immediate section, says:

"The State of Mississippi has decided to locate its State Normal College in Hattiesburg. The city of Hattiesburg, as an inducement to get this school located here, has agreed to donate \$150,000, and the county of Forrest has agreed to donate \$100,000, making a total of \$250,000, and 80 acres of very desirable land for a site. The city will sell \$150,000 of 5 per cent. 20-year bonds, and Forrest county will sell \$100,000 of 5 per cent. 30-year bonds for the purpose of raising money for this donation. These bonds will be sold within the next 60 days, and the buildings will be in course of erection by the first day of January, 1911. The entire \$250,000 is to be spent on the buildings alone. Our people look for great results from this institution, as there is expected to be about one thousand in attendance almost the year round."

CEMENT AND LIME PLANTS COMPLETED.

Extensive Operations in Hydrated Lime, Limestone and Portland Cement Manufacture in Two States.

[Special Correspondence Manufacturers Record.]

Hagerstown, Md., September 27.

Last fall, when the Security Cement & Lime Co. was organized and took over the plants of the Berkeley Limestone Co., Berkeley, W. Va., and the Maryland Portland Cement Co., Security, Md., plans were announced for building new stone crushing, lime and hydrated lime plants at Berkeley and enlargement of the Portland cement plant at Security.

These improvements and enlargements were started immediately, and have now been completed, so that the company now has an output of 2000 barrels of Portland cement daily from its Portland cement plant. Its limekilns have a capacity of 4200 bushels daily, from which ground and hydrated lime are each turned out at the rate of 100 tons daily, and lump and run-of-kiln lime according to demand. The fluxing stone plant has a capacity of 800 tons daily, the crushed stone plant 1000 tons daily and ground limestone to meet demand. The crushed stone is made in various sizes, according to market. In-

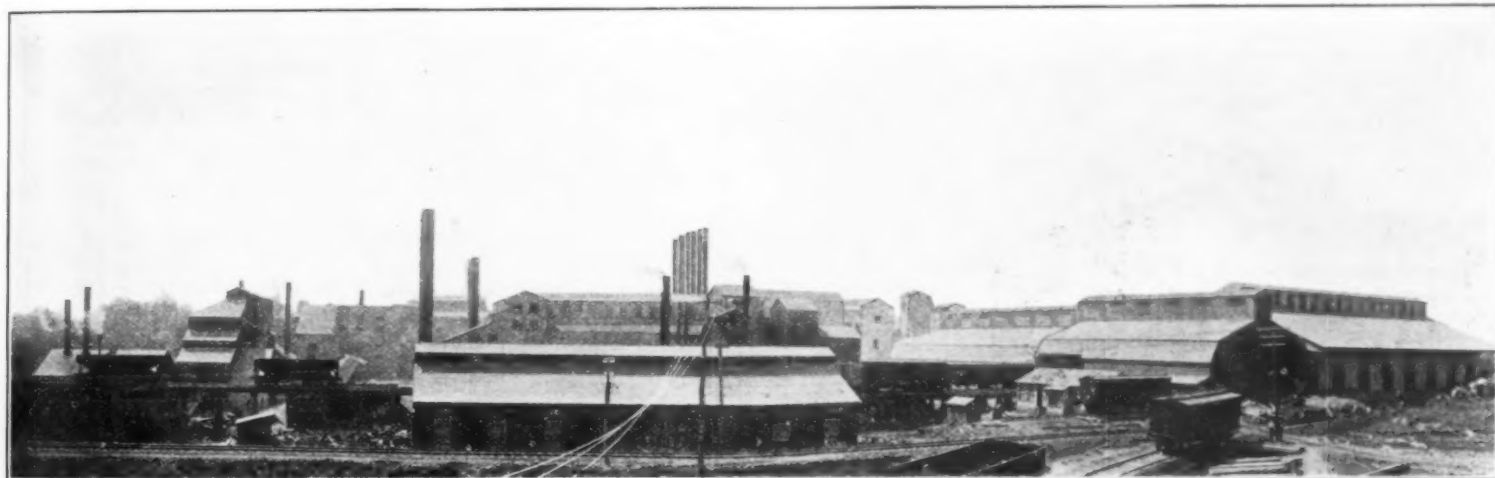
ried to the big crusher, which is about midway on the incline, and to the limekilns. The stone is removed by dynamiting, and is loaded into especially designed steel cars made by the Orenstein-Arthur Koppel Company, Pittsburg, Pa. This design of car was the result of years of experience at other plants, one of the principal advantages being that the sides are low and can be more readily loaded than the usual high-sided car. From records kept of men working on both types, it was demonstrated that the low-sided car effected 15 per cent. saving in labor. The hauling is done with a wire cable attached to an electric quarry hoist furnished by the S. Flory Manufacturing Co., Bangor, Pa., and having a capacity of six one-and-one-half-ton cars, 600 feet per minute. As previously stated, this incline feeds both the stone-crushing plant and the limekilns.

The limekilns are of the German type and three in number, 62, 64 and 66 feet high, the one at the upper end of the incline being the highest. Each kiln has a

the one in use should fail to work. The air in its passage through the producer generates the producer gas used to burn the lime. Draft for the kilns is created by big Sturtevant exhausters placed on top. The gas for burning is made by a producer plant installed by R. D. Wood & Co., Philadelphia, Pa. This plant consists of three producers. Crushed bituminous coal is used for producing the gas. The coal is brought in on a trestle and dumped into a cone-shaped hopper, the bottom of which feeds on a revolving disc about three feet in diameter. Projecting over the outer edge of this disc is a steel knife, which trims off the outer edge of the coal and causes it to drop in a uniform manner on a coal drag furnished by the Link-Belt Company, Philadelphia, Pa. The coal drag carries coal up an incline to three steel hoppers located directly above each producer. From the opening at the bottom of each hopper a goose-neck chute is attached, and this can be swung so as to feed the coal into any of the four openings with which each producer is provided. The use of gas for burning is not only more economical, in that less coal is consumed, but it has a further and very valuable advantage of allowing no foreign matter, such as cinders, dirt, etc., to enter into the finished product.

The kilns and gas producers were built

directly from this screen by a special belt conveyor carloading apparatus, which carries the material into box cars and does away with much manual labor. The smaller lumps passing through the screen are conveyed to hoppers, and if it is not desired to load the larger material into cars the screen is shoved aside and all of the material feeds on a belt conveyor carrying it to the hoppers. From these hoppers the material passes over a sorting grille, which sorts the material for barreling purposes. It can also be carried to a cracker furnished by the Sturtevant Mill Co., Boston, Mass., and from this by screw and bucket conveyors to a large steel tank. If, after leaving the Sturtevant cracker, which crushes the lime, it is intended to sell it as ground lime, it is passed to a Sturtevant emery mill, which thoroughly pulverizes it, and then to a large steel tank having at the bottom four bag-filling spouts. If the material is to be used for hydrating purposes, it is carried by screw and bucket conveyors to large steel storage tanks, and then passes into a rotary hydrator made by the Vulcan Iron Works, Wilkes-Barre, Pa. From the hydrator the material passes through vacuum separators made by the Raymond Bros. Impact Pulverizer Co., Chicago, and from these through bolting cloths to three large steel tanks, each having at the bottom four bag-filling



GENERAL VIEW SECURITY CEMENT & LIME CO.'S PORTLAND CEMENT PLANT AT SECURITY, MD.

cluding the various lime and hydrated lime products, there is being turned out from the Berkeley plant 27 different varieties of material.

The company's property at Berkeley consists of about 305 acres, owned in fee, and adjoining 140 acres held in perpetual lease. This tract is over one mile in length, and across its entire length contains large deposits of low silica limestone. For fluxing purposes and the manufacture of lime the stone in this vicinity is considered of the very purest and highest grade, and especially well lends itself to the industrial uses to which it is put.

The limestone quarries at the Berkeley plant are six in number, and are located within a distance of 1800 feet of each other. Two distinct veins of stone are found in these quarries, one having the best grade of high calcium limestone, containing less than 1 per cent. silica, and the other being higher in silica. The purer grade is used in the manufacture of the lime products and fluxing stone for steel and glass making, and the other for crushed stone purposes. If driven to a 100-foot depth, the company has sufficient stone to last it, at the present capacity of the plant, for 250 years.

The main lime and stone crushing plant is fed from the quarries known as No. 5 and No. 6. Leading from these quarries is a long incline on which the stone is car-

rated capacity of 1400 bushels per day of 24 hours. The top of the kiln is covered with heavy steel door which are operated by compressed air. The upper part of the kiln is laid with ordinary brick, and acts as a hopper for storing the stone until that below it has been burned and removed. The kilns are lined with fire-brick supplied by the Harbison-Walker Refractories Co., Pittsburg, Pa. The fire-brick is laid in the kilns according to the heat and abrasion it has to undergo, the selected brick being in the hottest zone.

For burning purposes producer gas is used, and this is injected at a point about 10 feet from the bottom of the kiln, and a temperature of about 2000 degrees is always maintained in the burning zone. The bottom of the kiln is divided into four sections by means of fire-brick partitions, these sections being just below the apertures for the producer gas. By this means any tendency of the material to arch is overcome, and, moreover, upon falling into these four receptacles it is below the flame and is allowed to cool off before being removed from the kiln. Part of the air necessary for the combustion of the coal is introduced into the bottom of the producer by a multivane fan making 3000 revolutions per minute and furnished by the B. F. Sturtevant Company, Boston, Mass. An additional Sturtevant fan is also connected up with this blowing system in case

according to designs made by Dr. E. W. Lazell, consulting engineer of the plant, and also consulting engineer and chemist for the Charles Warner Company, and by Mr. Irving Warner, general manager of the Charles Warner Company's lime plants in Pennsylvania. Dr. Lazell has long been associated with the design and operation of Portland cement and lime plants, and in designing this one advantage was taken of the very best practices evolved from plants already in operation, and it is felt that this plant represents in all of its different departments ideal lime manufacturing conditions.

During the whole period of putting the kilns into operation pyrometers were used in order to determine the exact conditions under which to obtain a full and uniform quantity and quality of heat, and at all times during operation regular samples of gas from both the bottom and top of the kilns are taken and analyzed. In other words, both in every phase of design and operation, the most scientific ideas have been utilized.

The lime is removed from the kilns through semi-cylindrical doors operated by gears. From these doors the lime drops on a steel apron conveyor installed by the Link-Belt Company, Philadelphia, Pa. The apron conveyor feeds the lime into Webster rotary, grizzly screens. Lumps above three inches in diameter are loaded

spouts. The capacity of the limekilns is 4200 bushels daily, and the capacity for ground lime is 100 tons daily and hydrated lime 100 tons daily. All of this product is a very pure, high-calcium lime, being about 98 per cent. pure.

In connection with the hydrated lime plant a hard wall plaster department will also be operated, and this is one of the most interesting features of the whole plant, because the process by which this hard wall plaster is to be made is a comparatively new one. This plant will use hydrated lime in a mixture with calcium aluminate in place of gypsum, which heretofore has been used. Calcium aluminate comes from the slag of blast furnaces using Cuban ore, which is high in alumina. This slag is especially prepared at the Pennsylvania Steel Co. for use at this plant, and it is ground and mixed to the extent of 15 per cent., as opposed to 60 per cent. of gypsum. The advantage of using calcium aluminate is that a greater quantity of hydrated lime is in the mixture and enables all of the latter's desirable qualities to be utilized. Hard wall plaster made according to this formula is quick-hardening, allows the use of more sand, is very plastic, and trowels quite easily. The Charles Warner Company of Wilmington has been making this product at its Cedar Hollow (Pa.) plant with much success. This plant is operated under license of the

Aluminate Patents Co., Philadelphia, Pa., which controls basic patents covering calcium aluminates mixtures.

For mixing the calcium aluminates, hydrated lime and hair, a Broughton mixer manufactured by W. D. Dunning, Syracuse, N. Y., has been installed. This plant will have a capacity of 75 tons of hard wall plaster daily. Altogether this line plant will turn out the following products: Lump lime, barreled lime, ground quicklime, hydrated lime (in all of their different grades), and hard wall plaster.

As previously stated, the big crusher of the crushed stone plant is located about midway up the incline leading from the quarry to the limekilns. This plant extends at right angles from the incline. The big crusher is a No. 9 Kennedy, made by the Chalmers & Williams Company, Chicago, and has a capacity of 1000 tons in a 10-hour day. This crusher is built on a heavy concrete foundation, 600 cubic yards of this material being used. From this crusher the stone passes through a Chalmers & Williams grizzly screen. All material above three inches in diameter is carried through a No. 6 Kennedy crusher and brought back through the screen. All material passing through the three-inch screen goes on a belt conveyor 288 feet on

pany also operates a fluxing stone plant, the capacity of this being about 800 tons daily. This material is supplied to iron and steel plants.

A department is maintained for the making of barrels. In this department are assembled the staves and heads which are purchased, and it has a capacity of 1200 barrels daily. The machinery was made by E. & B. Holmes Machinery Co., Buffalo, N. Y., and was purchased through the Carnegie Steel Co., Pittsburg, who designed the plant and superintended its construction. The Carnegie Steel Co. will furnish the steel hoops for the barrels.

For taking care of any immediate repairs that may be necessary from breakdowns or other causes, a machine shop and storeroom is maintained. In the storeroom a full supply of equipment and spare parts that may be needed is always kept on hand. Through a card system a perpetual inventory is kept of everything in the storeroom, so that the stock is not allowed at any time to be depleted.

All of the machinery throughout both the stone and lime plants is operated by electric motors, there being about 22 of these of various sizes, and all of them were supplied by the General Electric Co., Schenectady, N. Y. Current for these motors

tem on one side and the Baltimore & Ohio on the other; consequently, the products of this plant can be shipped either way over a wide and important consuming area. The company has its own spur tracks extending through various parts of the plant and connecting with these two railroad lines. The tracks in the plant are laid on a gravity basis and so arranged that the empty cars are deposited at higher level and drifted down as needed to the various storehouses and deposited when loaded on a lower level ready for shifting. Thus the use of the shifting engine is reduced to a minimum, the only time it being employed is when the full cars are to be taken out and new empties brought in.

The enlargements being made at the company's Portland cement plant at Security, Md., to bring its daily output up to 2200 barrels have also been completed. This plant was built a few years ago by the Maryland Portland Cement Co., but the demand for its product increased so rapidly that when the plant was taken over by the Security Cement & Lime Co., it was imperative that an increased output be provided. In designing the original plant for a capacity of 800 barrels daily, it was so laid out that additional units could be added at any time with facility. The fore-

tanks. The shale is carried through its own driers and a hammer mill furnished by the Jeffrey Manufacturing Co., Columbus, O., and stored into large steel tanks. Six of these tanks are devoted to storing the stone and one for the shale.

Connected with each tank is an automatic arrangement which draws a sample of the material every minute in the day. This enables a good average sample to be always secured. These samples are regularly analyzed and the mix of the stone and shale determined. The mixing is done with automatic scales, and from these scales the material is passed through two "tumbling" or mixing mills made by the Vulcan Iron Works, Wilkes-Barre, Pa., which thoroughly mix the two materials.

The arrangement for handling the gypsum has also been changed. This material is now brought in on the coal trestle and carried from this by a screw conveyor to the storage tanks, and from these added automatically to the mix.

For grinding on the raw end there are eight "Giant" Griffin mills, supplied by the Bradley Pulverizer Co., Boston, Mass. Two additional kilns, each eight feet in diameter and 125 feet long, have been installed. These were built by the Reeves Bros. Company, Alliance, O.



SECURITY CEMENT & LIME CO.'S LIME AND HYDRATED LIME AND STONE CRUSHING PLANTS, BERKELEY, W. VA.

centers and leading up an incline to a large 30-foot screen in the crushed stone storage-house. This belt conveyor was installed by the Webster Manufacturing Co., Chicago, and consists of an especially-designed belt and idlers made by the Robins Conveying Belt Co., New York. The large 30-foot screen in the storage-house is an assorting one, and has five different-sized openings in rotation for sorting the stone according to sizes. Under the screen are also located butterfly valves so arranged that any two sizes of stone can be mixed. For shipping the stone cars are brought directly under these steel storage tanks, which dump directly into them. The stone tanks have a capacity of 200 tons each. They are of steel construction, and are built on heavy concrete foundations. The storage plant is so arranged that it can be duplicated at any time.

For making pulverized stone, the stone is drawn from the tanks containing the smallest size and is passed through a drier, and from this to a Fuller mill made by the Lehigh Car Wheel and Axle Works, Catawqua, Pa. This mill pulverizes the material, so that 96 per cent. will pass through a 100-mesh and 87 per cent. through a 200 mesh. This pulverized stone is used principally for the following four purposes: Agricultural, glass houses, filler for asphalt, and fluxing. The com-

is received from the hydro-electric development on the Shenandoah River of the Winchester & Washington City Railway Co., 28 miles away. In order that its power supply may always be constant, the railway company has also installed a 1500-kilowatt steam turbine electric generating unit. At present the total power consumed by both the lime and stone plants is about 350 kilowatts daily, but this will be later increased to 500 kilowatts.

One of the striking features of this plant is the splendid manner in which it has been laid out. One department follows another in natural sequence, and the material is conveyed through the various stages by automatic conveying equipment, so that practically from the time the material enters either of the plants in the raw state until it emerges in the finished product it is not necessary to handle or touch it in any way. Thus not only is a full and uniform output obtained, but this is done with the use of a minimum amount of manual labor; in fact, it will only take some 40 men on both shifts to operate these two plants. Altogether about 200 men will be employed, most of them being in the quarries.

This plant is especially well located in regard to railway facilities, being in a fork with the Cumberland Valley Railroad, which is a part of the Pennsylvania sys-

tem on one side and the Baltimore & Ohio on the other; consequently, the products of this plant can be shipped either way over a wide and important consuming area. The company has its own spur tracks extending through various parts of the plant and connecting with these two railroad lines. The tracks in the plant are laid on a gravity basis and so arranged that the empty cars are deposited at higher level and drifted down as needed to the various storehouses and deposited when loaded on a lower level ready for shifting. Thus the use of the shifting engine is reduced to a minimum, the only time it being employed is when the full cars are to be taken out and new empties brought in.

Advantage was also taken from the experience in operating the smaller plant to rearrange portions of the older part, so that the material could be carried through its various processes with greater efficiency as well as greater facility. In the older plant the shale was mixed with the stone on its way from the quarry before these raw materials were handled in the mill in any way. In building a new plant, however, it was decided that greater efficiency and a more uniform product could be obtained by carrying the stone and shale through separate grinding and drying departments before bringing them together. As now arranged, the stone is carried first through two driers to storage bins, which feed into Krupp ball mills furnished through Thos. Prosser & Son, New York, N. Y., and then stored into large steel

After being burned the clinker is carried to two rotary coolers, which have supplanted the stationary vertical coolers used in the old plant. These coolers, which were also made by the Reeves Bros. Company, enables the clinker to be handled more rapidly and efficiently than in the old system. In the clinker-grinding department six "Giant" Griffin mills have been installed. The storage department has been considerably enlarged, the capacity of this now being 100,000 barrels. A new automatic weighing and bagging outfit made by the Richardson Scale Co., New York, N. Y., has been provided. The department where the coal is prepared for burning in the kilns, and which is kept separate on account of fire risk, has been increased to meet the larger capacity of the plant. A new coal drier made by F. D. Cummer & Son, Cleveland, O., has been put in. In the kilnhouse two new steel storage tanks for storing the powdered coal have been built, and a blower made by B. F. Sturtevant Company, Boston, Mass., has been installed.

One of the most interesting features of this enlarged plant is the new power-plant equipment. By the installation of a steam turbine made by the Allis-Chalmers Company, Milwaukee, Wis., which uses the exhaust steam coming from the engines already installed, an additional 1000 horse-

power has been secured without increasing the boiler capacity, and this installation is a striking instance of the advantages derived from the use of these exhaust steam turbine units for securing additional power. This turbine is directly connected to an electric generator, which furnishes sufficient electricity to enable all of the new equipment to operate by electric motors.

In the boiler plant an additional Babcock & Wilcox boiler was installed in order that any of the other boilers could be repaired or cleaned when necessary. Consequently, in making the new improvements it was not necessary to build an addition to either the boiler or engine room.

The company erected a stone-crushing plant to take care of the scrap around the quarry. The demands on this plant have been so great, however, that an additional No. 7½ crusher made by the Austin Manufacturing Co., Chicago, has been installed, and this plant now has a capacity of 400 tons daily. Consequently, the capacity of the quarry has also had to be increased, so that with the demands of the cement plant, which is now 600 tons daily, the total output of the quarry is 1000 tons daily.

A machine shop thoroughly equipped to take care of all minor and emergency repairs around the plant has been built. A large storeroom is also maintained, in which are kept repair parts of a great variety. In cement plants it is necessary to always have on hand duplicate parts for that equipment which is apt to be broken, so that the plant will not have to be shut down through a lack of the necessary part to immediately substitute. Some idea of the extent of the repair parts carried may be had from the statement that they are valued at \$35,000.

Among the new equipment installed may be mentioned the following: One No. 6 crusher, Chalmers & Williams Company, Chicago; elevating and conveying equipment, Link-Belt Company, Philadelphia, Pa.; Webster Manufacturing Co., Chicago, and H. W. Caldwell & Son Company, Chicago; electric motors, Westinghouse Electric & Manufacturing Co., Pittsburg, Pa.; transmission equipment, George V. Cresson Company, Philadelphia, Pa., and T. B. Wood's-Sons Company, Chambersburg, Pa.; driers, Reeves Bros. Company, Alliance, O.; steel bins, Tippet & Wood, Phillipsburg, N. J.; structural steel for the kiln, stock and drier buildings, Riter-Coley Manufacturing Co., Pittsburg, Pa.; structural steel for the raw grinding and raw material buildings, Virginia Bridge & Iron Co., Roanoke, Va.

All construction at both plants was in charge of Mr. John Warner as superintendent of construction.

This plant is located directly on the Western Maryland Railroad, and connection are made at Hagerstown, two miles away, with the Baltimore & Ohio, Norfolk & Western and Cumberland & Valley railroads, all of which combine to give a splendid outlet for the finished products in most important and large consuming markets.

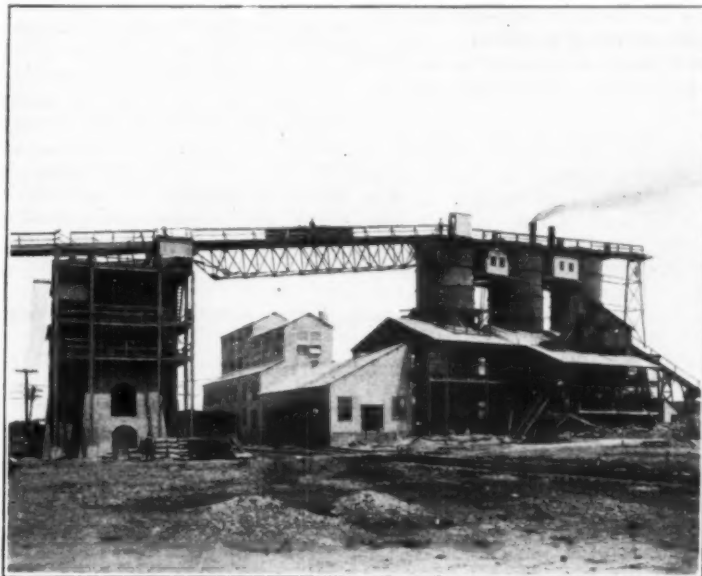
The main offices of the Security Cement & Lime Co. are at Baltimore, and its officers are: A. W. Paige, president; Loring A. Cover, vice-president and treasurer; H. B. Warner, secretary, and Charles W. Warner, chairman executive committee.

The output of lime plant will be handled through the sales offices of the company at Baltimore and the Charles W. Warner Company, Wilmington, Del. The territory south and west of Pittsburg and Baltimore will be handled by the former, and north and east of Pittsburg by the latter. Through the established sales offices of both of these companies the products of the Berkeley plant were early brought be-

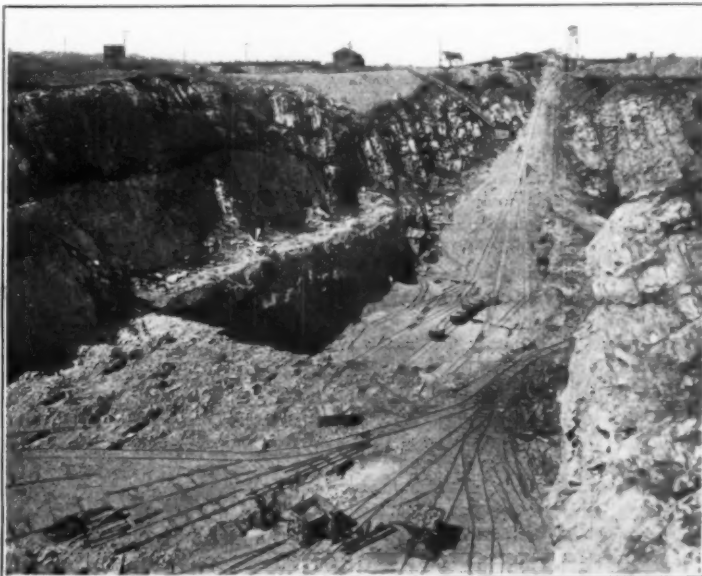
fore consumers, and as a result from the time the plant started operations there was a steady demand for its output.

The entire output of the cement plant will be handled through the Baltimore

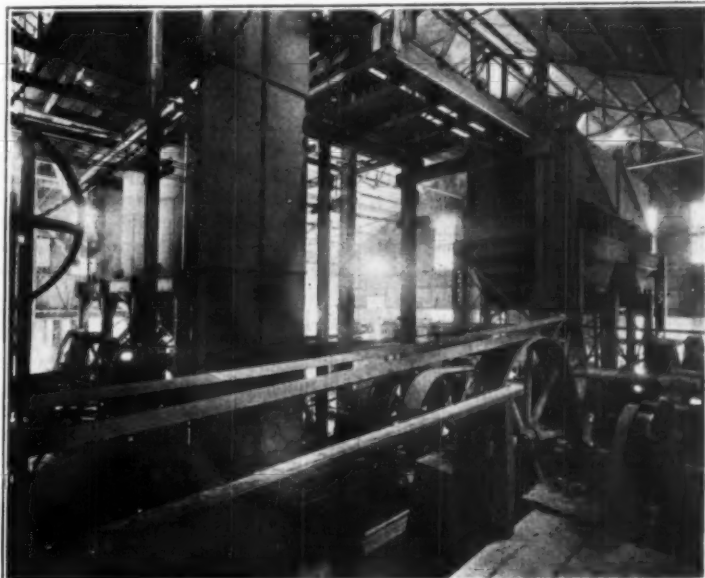
its market, which includes Baltimore and Washington, where it has been largely used in municipal, Government and private construction work of all kinds. This is well evidenced by the fact that the plant



STONE CRUSHER AND LIMEKILNS, BERKELEY, W. VA.



BIG FLUXING STONE QUARRY, BERKELEY, W. VA.



INTERIOR FINISHING END, SECURITY CEMENT PLANT.

office. Security Portland cement has won for itself an enviable reputation as a high-grade product, and is firmly established in

To Carry West Virginia Coal to Cuba.

On account of the steadily-increasing coal trade which it has developed in Cuba, and to more readily facilitate the shipment and the handling of its coal, the Havana Coal Co. is having built at the yards of Sir Raylton Dixon & Co., Ltd., Middleborough, England, two steamships especially designed to meet these requirements. These vessels will be known as the Berwindoor and the Berwindale. The former has already been completed, and will be ready for service about November 1, while the latter will be finished within several weeks. Each of these steamships has a carrying capacity of 8100 tons of coal, and they have been especially equipped to quickly discharge their cargoes with modern coal-handling machinery.

They will operate between Newport News and Havana. Coal for the trade all comes from the mines of the New River & Pocahontas Consolidated Coal Co., located on the Chesapeake & Ohio Railway, which carries the coal direct to its big coal piers at Newport News. Heretofore the coal for this trade was carried by chartered vessels, none of which were especially arranged for handling coal. These steamships will not be used for the general trade nor enter into competition with any of the existing lines, but will be devoted exclusively to the company's coal trade.

The Havana Coal Co. is a subsidiary of the Berwind-White Coal Mining Co., which is one of the largest operators in the country, having extensive holdings both in Pennsylvania and West Virginia, and though the Berwind-White Company is an American concern whose owners are leaders in American railroad and industrial developments, its ships will be built in England and fly the British flag.

WANT INFORMATION ABOUT THE SOUTH.

Mr. J. Ruth, 1026½ Hanover street, Baltimore, Md., seeks information about sheep-raising in the South, especially for spring-lamb business. He also desires to know as to a good location for a canning and packing factory.

S. M. Moulton, Pillsbury Building, Minneapolis, Minn., writes: "We are looking for a large tract of land, comprising 2000 to 3000 acres or more, that can be used for colonization. These lands are to be settled by people where they can make their homes and cultivate them. Any information you can give relative to Southern countries would be appreciated. If you will have railroads send me literature about the Southern States it will be gladly received."

Prof. J. E. Wellwood, Flint, Mich., writes that he is deeply interested in the South, and desires to locate there in the near future. He adds:

"I am doing my best to interest my friends in doing the same. If Horace Greeley had lived today he would have said: 'Young man, go South.'"

Mr. Wellwood desires literature about the advantages of the South.

A New Steamship Line to Texas.

The Seaboard & Gulf Steamship Co. has been organized by E. G. Warfield, for many years with the Mallory Line, and associates for the purpose of operating a steamer line between New York and Velasco, Tex. It is understood that E. S. Hughes of Abilene, Tex., will be elected president, and Felix Jackson, president of the Houston & Brazos Valley Railroad Co., will be secretary and treasurer.

The organization of this line only indicates the rapidity of the development of trade between New York and Texas ports.

WM. H. STONE.

WHAT IS YOUR TOWN DOING?

The MANUFACTURERS RECORD will be glad to receive from responsible correspondents in every town in the South brief items of news about business conditions and the opportunities for industrial enterprises. This information is desired for publication without cost of any kind to the sender, and regardless of whether the writer of the letter is a subscriber or not. The MANUFACTURERS RECORD accepts no paid town write-ups. It seeks information of this kind from commercial and industrial organizations and from municipal authorities in every town and city of the South.

This department is open only to news facts of interest to investors and homeseekers. Communications of 200 or 300 words are likely to be given prompter publicity than more extended ones.

A BIG SUGAR REFINERY FOR TEXAS CITY.

Texas City, Tex., September 20.
Editor Manufacturers Record:

The Texas Sugar Refinery Co., a corporation recently created and capitalized at \$1,000,000, will build its great plant at Texas City. In its prospectus it enumerates the following reasons why this place was chosen as the most favorable for the operation of its factory:

"It is located on the mainland, on the west shore of Galveston Bay, in close proximity to the city of Galveston, and is considered and operated as a part of the port of Galveston, being so officially recognized by the United States Government, the different exchanges and by every railroad centering at Galveston. Situated on the mainland at a mean elevation of 10 feet, and protected from the Gulf storms by Galveston Island and Bolivar Peninsula, it is secured against damage from this source.

"Texas City, while equally favored with a deep-water channel to the sea, offers as good if not better railroad facilities than Galveston or any other Gulf port. Not considering projected railroads, the Texas City Terminal Railroad, from which spurs will be run to the refinery, at present connects with the following lines of railway: International & Great Northern, Southern Pacific, Missouri, Kansas & Texas, Gulf, Colorado & Santa Fe, Galveston, Houston & Henderson, Rock Island system, Galveston, Harrisburg & San Antonio, Colorado and Southern and Frisco system.

"In proposing Texas City as the site for the refinery careful consideration has been given to the exceptional facilities afforded by the above-named railroads for the distribution of its products and the transportation of a large portion of its raw sugar supply from the sugar-growing sections of the States of Texas and Louisiana. The present freight rate on refined sugar from Texas City to Texas common points is considerably less than that from New Orleans, where the only sugar refineries are located which could be considered as possible competitors of the proposed refinery in the sale of refined sugar for this territory.

"Freight differentials on refined sugar are also in favor of Texas City for a large territory outside of the State of Texas, and a like advantage will be obtained in freight rates on raw sugar produced in Texas and a large portion of Louisiana.

"The geographical location of Texas City is more favorable for obtaining the raw sugar supply for a refinery and for the distribution of its products than that of any other place in the country where a refinery is located. There are at present several lines of steamships running between Galveston Bay and West Indian and Mexican ports, besides steamships and sailing vessels irregularly in service and plying between Central and South American and other ports, which brings Texas City in direct communication with the most important foreign countries furnishing raw sugar to the United States, and in connection with the Tehuantepec Railway will afford cheap transportation for raw sugar from the Hawaiian Islands via Salina Cruz, Tehuantepec and Coatzacoalcas. The Texas City Transportation Co. has

extensive terminals directly adjacent to the property on which it is proposed to erect the refinery, and the Wolvin line is operating steamers with regular sailings between Texas City and Mexican ports, while the Texas City Steamship Co. maintains weekly sailings between Texas City and New York. Steamship service between Texas City and Central American countries is readily available.

"Assurance has been received that freight rates on raw sugar from Cuba and Porto Rico to Texas City will be less than the freight rates to New Orleans, and this condition will also apply to the rates from Mexican, South American and other ports. The saving in cost of freight on imported raw sugars, which will thus be effected, together with the further saving in cost of freight on domestic raw sugars purchased for the supply of the refinery, represent alone a considerable increased profit in the refining of sugar at Texas City as compared with any other location in the United States.

"Furthermore, besides regular lines of steamship from New York to Texas City and Galveston Bay, there are steamships and sailing vessels running from Eastern and Southern ports, which, together with the several railroads connecting with Texas City, provide transportation facilities to and from all parts of the United States and makes accessible the cheapest markets for the purchase of all the supplies required by a refinery."

Such are the statements made in this prospectus. Now, if Texas City's location is so very favorable for the operation of a sugar-refining plant, it is no less favorably located for the manufacture of almost any other commodity. It would seem that good transportation facilities, plenty of raw material and a ready market for the finished product are the three most important requisites for a manufacturing center. All of these are to be found available at this favored spot, and must help to give Texas City a leading place among the important manufacturing cities of the South.

EDWARD T. GLIOT.

WALNUT RIDGE WANTS FACTORIES.

Walnut Ridge, Ark., September 22.

Editor Manufacturers Record:

Walnut Ridge is a thriving little town of about 2500 people, situated in the north-eastern part of the State. The town is located 225 miles from St. Louis, 400 miles from Kansas City, 120 miles from Little Rock and 90 miles from Memphis, with fast freight service to all of these cities by the main lines of the Frisco and St. Louis & Iron Mountain railroads. We are situated in the heart of one of the finest sections of agricultural countries in the world. Truck growing is beginning to be worked here on quite a large scale. One truck grower last year made three crops of corn on the same spot of ground; affidavits will be sent on request.

We have a good opening for a canning-house to can our tomatoes, corn, beans, pumpkins and potatoes. The vast timber tracts in this vicinity would furnish material for years to come to woodworking plants and their by-products. A box factory, a hame factory, a stirrup factory would all be paying institutions here. We have plenty of labor to run an overall and

shirt-making factory, hat and cap factory and bag factory. The freight rates are low. Having two competing lines of railway, the rates are made as close as possible. We have two banks with large capital doing about all the business they can do, and another bank would pay from the beginning. There is talk of putting in a compress for compressing the cotton grown in this territory. As something like 25,000 to 40,000 bales of cotton are handled through this territory yearly, this trade would make the venture a good and safe one from an investing standpoint. We have a low tax rate. Cotton mills are exempt from taxation in this State for seven years. We have no negroes, except a few in the towns, nearly all labor being a good class of whites.

Factory sites can be obtained at moderate prices.

Any information will be cheerfully furnished upon request.

E. H. THARP,
Secretary Business Men's Club.

BUILDING NEW SCHOOLS AT GREENSBORO.

Chamber of Commerce,
Greensboro, N. C., September 24.

Editor Manufacturers Record:

Greensboro has succeeded in locating one of the large auxiliary steam plants which the Southern Power Co. will build in connection with the development of its power plant.

Our Board of Aldermen has just closed contract with the North Carolina Public Service Co., giving it a 10-year contract for lighting the streets of the city. Under erection of a \$25,000 school building, and the new contract there will be a large increase in the number of lights.

Plans have just been accepted for the in addition to this, \$10,000 are being spent in additions to present school facilities. Greensboro has long been noted for her educational advantages, having the State Normal and Industrial College for young women, the Greensboro Female College, the State Agricultural and Mechanical College for colored men and women, Immanuel College and Bennett Seminary, both colleges for the colored people.

Our Chamber of Commerce has had a committee drafting a charter for our city, which, if adopted, will put the city government on a commission form of government basis.

C. C. McLEAN,

Secretary.

ACTIVE BUILDING OPERATIONS AT WACO.

Business Men's Club,
Waco, Tex., September 21.

Editor Manufacturers Record:

Reports received by the Waco (Tex.) Business Men's Club indicate that the activity that has marked all lines of building is not slackening up. At present there are more jobs open for mechanics and laborers than there are men to fill them. This condition of affairs is likely to continue for some time, as all of the jobs under construction are large ones, and some of the smaller ones now being finished will be replaced by such building as that of a \$140,000 high school, the \$500,000 Amicable Building, the \$400,000 Peerless Hotel and the \$250,000 lock and dam which will make the Brazos River navigable to Waco.

With the exception of the Amicable Building, none of these last-named jobs are under contract, but most of them are about ready for the bidders. The usual large run of small buildings and residences are coming in now, and prospects are bright for a good winter of building. Waco's 34,000 people have caught the spirit of activity, and many of them are planning construction projects that will make business.

The city is doing a large amount of pay-

ing, the chief of which is the laying of blocks of bitulithic pavement on the principal residence streets. The street-car company is relaying its tracks where the pavement is going down, and has just completed extensive improvements at the barns and shops. The gas plant is also being rebuilt, and additional holders provided on account of the city's rapid growth.

The remarkable success of the factories and jobbing enterprises has made the town builders anxious for more, and a special effort is being made to secure new industries. The Business Men's Club is offering free sites on the railroads to these industries, and a number of large industries are considering moving to Waco.

C. W. COONS,
Secretary.

GULFPORT WANTS FACTORIES.

Gulfport, Miss., September 24.

Editor Manufacturers Record:

The compromise recently effected between the various railroads of the State of Mississippi and the railroad commission on the cotton-rate question, putting Gulfport on a parity with Mobile and New Orleans, will do more for the development at large of the State, and Gulfport in particular, than any work ever accomplished by the combined efforts of the commercial organizations of the State.

Our city now stands in need of manufacturing enterprises, and is admirably located for a hardwood factory, a furniture factory and possibly a match factory. We have vessels arriving in this port every few days bringing rock or dirt as ballast from the hardwood districts of Central and South America. This fact alone shows how easy it would be to get the working material for a hardwood factory.

Our freight rates to the ports of the world can be made cheaper than any competitive ports, and the markets of the United States through the various railroads open for us competition between other manufacturing centers.

Correspondence solicited.

COMMERCIAL UNION.

FOR A BAG FACTORY.

Chamber of Commerce,
Natchez, Miss., September 17.

Editor Manufacturers Record:

The Natchez Chamber of Commerce wishes to correspond with parties in regard to establishing at this point a box-manufacturing plant. We have two hardwood sawmills to supply the wood necessary for the construction of boxes, crates, etc. The supply of all kinds of hardwood timber is almost inexhaustible in the Natchez territory in Mississippi and Louisiana. The Natchez Canning & Manufacturing Co. and the Natchez Meat Packing Co. use annually over 100,000 boxes and crates, and the Carpenter meal and grist mill requires 200 barrels per day to pack its products in. In addition to this, truck growers in this territory use crates in large numbers.

L. E. DAVIS,
Secretary.

WANT FLOUR MILLS.

Business Men's League,
Helena, Ark., September 20.

Editor Manufacturers Record:

The planters and plantation owners in the vicinity of Helena are now agitating the question of wheat-growing on a more extensive scale, and would like to get in touch with some good flouring mill man with some capital. Several thousand acres of wheat could be contracted and some money subscribed toward the capital stock. Any communications should be addressed to

D. CUTTING,
Industrial Commissioner.

The Pecan Illustrative of Agricultural Possibilities.

[Special Correspondence Manufacturers Record.]

Scranton, Miss., September 23.

The city of Pascagoula may justly claim the honor of being the home of the paper-shell pecan and the pecan industry that is doing so much toward the development of this section. Although the late Col. W. R. Stuart of Ocean Springs (in this county and 20 miles west of Pascagoula) began the budding of the pecan, it was within the purlieus of the city of Pascagoula that the cultivation and propagation of the pecan was made a commercial success, and many of the most

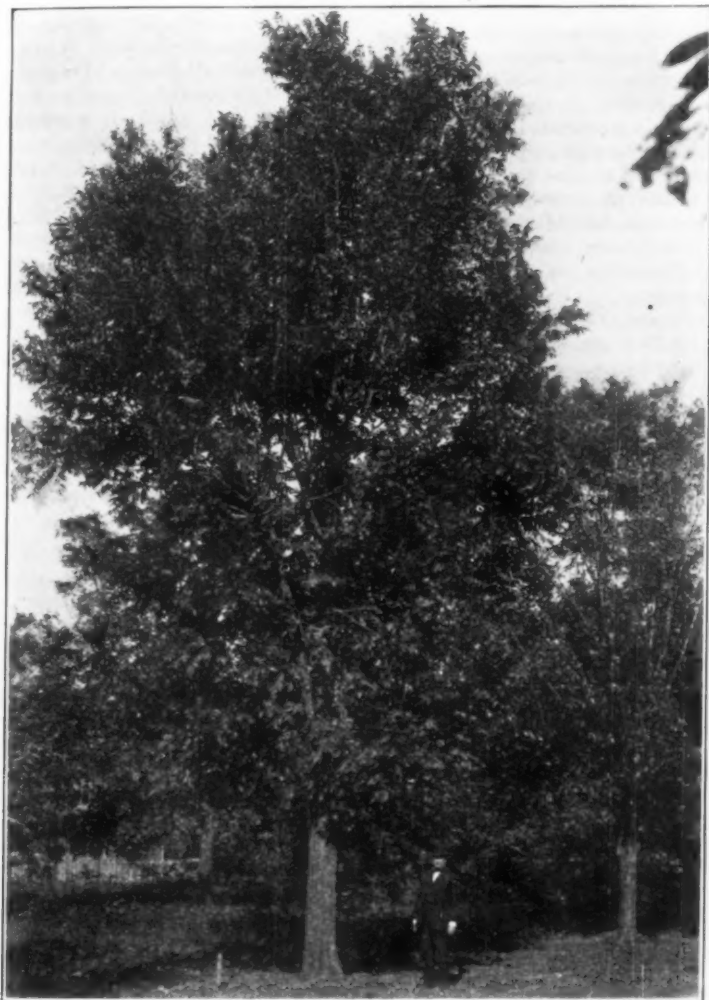
after General Wheeler. The original tree is 30 years old and has at this writing a crop estimated at least at two barrels, or 260 pounds of pecans, worth 40 cents per pound. Mr. Delmas has also originated the "Shafter," named after General Shafter, and the "Taft," named after the President of the United States, but as they are new varieties we need not dwell upon them here.

There has also originated in this city or its vicinity the following famous varieties: The "Stuart," "Hall" and the "Big

second. The writer lately visited two pecan groves, the oldest of which stood on flat land that had no natural and very imperfect artificial drainage, and the youngest orchard stood upon high, well-drained land. The latter was worth from 25 to 50 per cent. more a tree than the former. It is not drought, but excessive moisture that the horticulturist must guard against in the Gulf Coast section, for the rainfall on the seacoast of Mississippi is heavier than anywhere else in the United States. The writer wishes to insist strongly upon this point, for many a settler from the high, dry altitudes of Illinois and New York has proceeded upon the principle of cultivation known there, and has not learned his mistake until he has wasted much time and money.

Many pecan culturists plant between their growing trees Satsuma oranges or peaches, which are removed as soon as the pecans are large enough to shade them throughout the day, for the orange and the peach are sun-loving fruits and do not take kindly to shade. Mr. A. G. Delmas has, however, begun an experiment that not only spells success, but will probably revolutionize pecan culture and make it

chased the Nut Bank property, and several thousand acres of pine lands besides that they will improve and sell to actual settlers. The misfortune of South Mississippi has been that her people have paid but little attention to agriculture and horticulture, and they are just beginning to learn that the foundation of a nation's wealth and greatness is not in her forests, but in her soil. This truth was known and appreciated by the Italians even in the Dark Ages, for in the year of 1283 the country's "aspect was one of a prodigious prosperity, which contrasted so much with the rest of Europe," writes Sismondi of the Republic of Pisa, "that nothing but poverty and barbarism were to be found elsewhere. The open country, designated by the name of *contado* appertaining to each city, was cultivated by an active and industrious race of peasants, enriched by their labor, and not fearing to display their wealth in their dress, their cattle and their instruments of husbandry. The proprietors, inhabitants of towns, advanced them capital, shared the harvest, and alone paid the land tax; they undertook the immense labor that has given so much fertility to Italian soil—



THE ORIGINAL SHAFTER PECAN TREE.

famous varieties of pecans known to nut growers have originated in this place.

It was in 1875 that Mr. A. G. Delmas cleared off a piece of land that was covered with pines and gall berry and began the cultivation of this most edible and delicious of all the nuts known to commerce. His orchard is now one of the show sights of the city. Nut growers from all parts of the union visit it to pay their homage to the original Schley and Delmas trees that stand in his orchard. He has 10 acres, and he estimates his crop for this year at from 80 to 100 barrels of 130 pounds to the barrel, and which will average from 30 cents to \$1 per pound to the grower. One famous variety that this orchard has given to the world is "The Schley," named after Admiral Schley just after the battle of Santiago. This pecan took the bronze medals at Paris (where it made 97 points) and St. Louis, and the diploma at Buffalo, and is considered the leading paper-shell variety. Another great variety that originated here is the Delmas, being of a harder shell than the Schley, but very large, and the most prolific pecan known. The third variety that originated in this orchard is the Wheeler, named

Z." The latter originated on the farm of Mr. J. W. Zinc, vice-president of the People's Bank and a pecan culturist. Pictures of the original trees of the "Delmas" and "Shafter" accompany this article and will give the reader an adequate idea of the height and size of a pecan tree when fully grown.

Within the last decade the planting of pecan orchards has become a most active industry in this section of the State, and many orchards have been planted. The most noted is the great orchard of 320 acres at Nut Bank, Miss., planted by the Lilly Orchard Co. of Bloomington, Ill.; the Nut Bank Orchard of 50 acres, and the Delmas Orchard of Orange Grove, being of 50 acres, and is generally conceded to be the best orchard of its size in this county. The writer lately visited the Lilly Orchard at Nut Bank and found its superintendent busy putting in a system of drainage that will do much to enhance the value of this magnificent orchard.

Were the writer to be asked what were the three requisites for successful horticulture in this section he would answer, the first is drainage, underground drainage if possible, and the second is likewise drainage, and the third is like unto the



THE ORIGINAL DELMAS PECAN TREE.

doubly profitable. He turns a flock of sheep into his orchard, and they not only keep down the grass that might prove a nuisance, but make waste land profitable. The grass that grows between the trees is converted into wool and mutton, which eventually goes to swell the balance at the bankers. During the excessive hot weather of August and September the pecan gives a shade that is very grateful to the grazing sheep, while in winter the naked boughs of the trees permit the warmth of the sun to get through.

Horticulturists are looking toward South Mississippi as a most favorable field for fruit and nut culture. Only a few weeks ago an Indiana company pur-

that of making dykes to preserve the plains from inundation of the rivers, and of deriving from these rivers innumerable canals of irrigation. Men who meditated and who applied to the arts the fruits of their study practiced already that scientific agriculture of Tuscany and Lombardy which became the model of other nations. At this day, after more than five centuries, the districts formerly free and always cultivated with diligence are easily distinguished from those half wild districts which had remained subject to feudal lords."

Holland was at one time a barren waste of sand dunes and morasses, but her people built dykes and canals and literally

wrested the land from the sea and made of it a garden. Today in South Mississippi interest is 10 per cent., and good commercial paper discounts at 8 per cent., while in Holland the highest rate of interest or discount is 2 per cent. The people that wrought this miracle had courage, patience and industry, and an abiding faith in the goodness of their land and country.

CHAS. E. CHIDSEY.

EASTERN KENTUCKY ACTIVITIES.

Railroad and Coal Company Presidents Investigating Situation.

[Special Cor. Manufacturers Record.]
Ashland, Ky., September 27.

Important developments in the Elkhorn coking coal fields of Eastern Kentucky would seem to be in early contemplation, in view of the activities of railroad magnates and the owners of large coal bodies in this section. Reports of railroad extensions have been repeatedly published within the past few weeks, and a visit just made by Geo. W. Stevens and F. M. Whitaker, president and vice-president, respectively, of the C. & O.; Wm. Cotter, president of the C. H. & D.; Clarence W. Watson, president; Jere Wheelwright, vice-president, and a number of directors of the Consolidation Coal Co., which included not only a trip to the end of the Big Sandy branch of the C. & O. road at Helier, but a two-day journey on horseback into the mountains of Southeast Kentucky, has given the impression that some definite plans for early railroad construction are under consideration.

As principal owners of the great coal area, covering several hundred thousand acres, held by the Northern Coal & Coke Co., Mr. Watson and his associates have for some time been giving consideration to the most feasible plans for developing the property. It is the understanding of those who have talked with the representatives of these interests that some conclusions have been reached, and that railroad extension to provide facilities for an important development have been asked for.

It is considered certain that the C. & O. road will extend from its Big Sandy branch a line or lines to take care of any development the Northern Coal & Coke Co. may make. In addition, the Lexington & Eastern, recently acquired by new interests, is making surveys for an extension of that road into the territory of the Northern Coal & Coke Co. The C. H. & D. will probably complete the bridge across the Ohio at or near Ashland, and may carry out the old plan of Eugene Zimmerman to build a line into the Elkhorn coal fields, or simply make arrangements with the C. & O. for handling a portion of its coal-carrying traffic.

The Consolidation Coal Co.'s extensive developments at Miller's Creek are believed to be only the beginning of activities here by the same interests that will soon bring to Eastern Kentucky the attention its enormous deposits of high-grade coal entitle it to. Analyses and oven tests demonstrate that no finer coking coal exists anywhere than the Elkhorn coal, and it is regarded by authorities as inevitable that the general coke market of the country must in time rely largely on the Eastern Kentucky fields. A recognition of this fact and plans to take advantage of the situation as it ripens are believed to be the occasion of the present visit of railroad officials and coal operators.

Reports from many parts of Texas and from Florida indicate unusual activity, especially for this season of the year, of the incoming of homeseekers. Many trains to Florida are crowded with people from the West who have decided to settle there, while Texas railroads report a large increase in the movement of population to that State.

GOOD ROADS

WEEK'S HIGHWAY RECORD.

Progress in Southern Road and Street Improvement.

[Full details of highway undertakings are given in the Construction Department.]

Bonds Voted.

Hilmo, Mo.—City voted \$5000 bond issue for street improvement and sewers.

Sinton, Tex.—San Patricio county voted \$100,000 bond issue for road improvements.

Stamford, Tex.—City voted \$10,000 bond issue to complete certain paving.

Bonds to Be Voted.

Black Mountain, N. C.—Township will vote after January on \$100,000 bond issue for road construction from Black Mountain to Mt. Mitchell; 16 to 20 miles long.

Conway, S. C.—Horry county will vote in November on \$100,000 bond issue for road improvements.

Edna, Tex.—Jackson county will issue \$100,000 of bonds for road improvements.

Houston, Tex.—City contemplates \$100,000 bond issue for street paving.

Lexington, Ky.—City will vote in November on \$500,000 bond issue for street improvements.

Lockhart, Tex.—Precinct No. 1 of Caldwell county will vote in October on \$50,000 bond issue for road construction.

Princeton, W. Va.—Mercer county contemplates an election in November to vote on issuing \$200,000 of bonds for road construction.

San Angelo, Tex.—City votes October 20 on \$20,000 bond issue for street paving.

Wetumpka, Ala.—Elmore county votes November 8 on \$170,000 bond issue for road improvements.

Contracts Awarded.

Alexandria, La.—City awarded contract for concrete curbing on Gould avenue.

Birmingham, Ala.—City awarded contracts for street grading and sidewalk improvements on Northside; cost \$25,000.

Dallas, Tex.—City awarded contract for paving certain section of Swiss avenue and for paving another section of same street.

Nashville, Tenn.—City awarded contracts for paving Eighth Ave. and for curbing and sidewalk construction on various streets.

Norfolk, Va.—City awarded contract for constructing three miles of macadam roadway.

Tarpon Springs, Fla.—City awarded contract for paving with vitrified brick; cost \$45,000.

Contracts to Be Awarded.

Avis, W. Va.—City receives bids until October 3 for street paving.

Birmingham, Ala.—City receives bids until October 5 for constructing double-brick roadway connecting Fairview with Ensley; estimated cost \$57,000.

Birmingham, Ala.—City will pave section of Tenth avenue.

Birmingham, Ala.—City will provide \$270,000 for paving principal streets in Northside.

Charleston, S. C.—Charleston Terminal Co. will pave Concord street.

Dallas, Tex.—City receives bids until October 5 for paving portion of Pearl street.

Denton, Md.—Town will pave sidewalks and shell portion of Franklin street.

Farmville, Va.—City contemplates expending \$30,000 for road improvements; bitulithic or vitrified brick to be used; granolithic sidewalks and cement gutters on hillsides.

Fort Sill, Okla.—Constructing Quartermaster receives bids until October 15 for grading roads and constructing concrete walks in new artillery post.

Greenville, S. C.—City will expend \$80,000 for asphalt and asphalt macadam paving.

Jonesboro, Tenn.—City contemplates improving streets.

Memphis, Tenn.—City receives bids until September 30 for paving Peabody avenue with asphalt or bitulithic; concrete foundation.

Meridian, Miss.—City has \$50,000 available for constructing 18,000 square yards creosoted wood-block pavement on 8th street.

Oklahoma City, Okla.—City receives bids until October 4 for constructing street and alley crossings and for paving, grading, etc., of 30th street and Lee avenue.

Orange, Tex.—S. R. Shepherd, secretary Commercial Club, receives bids until October 6 for building public highway in Louisiana, 4.46 miles long.

Paducah, Ky.—City will invite bids for constructing concrete sidewalks, curbs and gutters on certain sections of Jefferson and 10th streets and sidewalks on Flournoy street.

Richmond, Va.—City opened bids September 28 to grade to subgrade section of Hanover avenue and Sheppard street.

Sherman, Tex.—City contemplates paving sidewalks on various streets.

South Boston, Va.—State Highway Commission receives bids until October 4 for rubble stone paving in Halifax county.

Welch, W. Va.—McDowell county will expend \$50,000 for proposed improvement and construction of roads.

Road Building in Texas.

[Special Cor. Manufacturers Record.]
Fort Worth, Tex., September 24.

Never before has there been such a sentiment for the construction of public highways as is developing in Texas today, and this progressive spirit is not confined alone to the largely-populated communities, as is shown by the reports that come in to the headquarters of the Texas Commercial Secretaries' Association from the remote corners of the State of proposed bond issues and requesting the organization to furnish literature and offer suggestions as to the management of the campaign for bond issues.

"Road building is a germ that is transmittable from one community to another," said T. W. Larkin of Beaumont while at the headquarters of the Commercial Secretaries in this city last week, "and I am glad that Texas is now in a virile epidemic of road building. As a rule, when one community improves its public highways the adjoining town catches the spirit of development or is forced in self-defense of its trade territory to improve its thoroughfares, and the sentiment gathers strength as it travels, and in numerous instances we find the farmers of Texas initiating the movement for road improvements. We are entering into an era of road building in Texas, and we will soon have turnpikes from the Panhandle to the Gulf," said the Beaumont road builder.

A Wonderful Scenic Road.

If the plans of the citizens of Black Mountain are carried through successfully, one of the most gorgeous scenic effects in America will be soon thrown open to the public. Black Mountain is about 16 miles from the summit of Mount Mitchell, the highest peak in the East, and it is proposed to build a "modern" road covering this distance along the very top of the mountain range. The top of this range is now about five feet broad, and the plans provide for leveling the peaks down to 12 or 18 feet, thus giving a roadway beginning at Black

Mountain with an elevation of 3000 feet and rising gradually along the top of the mountain until the summit of Mount Mitchell is reached, a height of 6712 feet.

The scenery in Western North Carolina has long been recognized as among the most beautiful in the world, but this particular section has not heretofore been easily available to the sightseer, owing to its inaccessibility. It is proposed to make this road solely a sightseeing one, and the citizens of Black Mountain have approved the issuance of \$100,000 bonds providing for its construction. By dividing the work among numerous contractors it is planned to have the road completed by the summer of 1911. The idea is to place about 20 contracts for the work with 20 different contractors, allowing each contractor three-quarters or one mile apiece. This will enable the work to be carried on with great facility and the road to be finished in the time desired. It is estimated that the cost will be about \$5000 per mile, and that a considerable part of the grading can be done for \$1000 per mile.

Black Mountain is located about 16 miles east of Asheville, on the main line of the Southern Railway, and it is anticipated that many thousands of visitors will take advantage of the opportunity offered to take such a marvelous scenic ride.

In a letter to the MANUFACTURERS RECORD Mr. R. O. Alexander of Charlotte, N. C., tells of the various features connected with this movement, together with the advantages to be secured from such a road.

A Projected Highway Between Jacksonville and New Orleans.

A movement is on foot to build an improved highway connecting New Orleans and Jacksonville and extending through to Tampa, Fla. This road would be nearly 1000 miles in length, and would form a connecting link in a system of improved highways that are being built or contemplated, extending from Mexico through Texas to New Orleans, across to Jacksonville, up to Atlanta and on to New York.

From New Orleans this road has already been started, and 100 miles to Baton Rouge have been completed and surfaced. The movement is now to extend this highway from Baton Rouge to Pensacola via Madisonville, Hattiesburg, Scranton, Mobile and Flomaton.

For the purpose of arousing interest all along the line in this work, Mr. George R. King of New Orleans is visiting the various sections and securing the co-operation of business and other organizations.

As there is also a movement on foot and considerable work has already been done toward building an improved road by various communities connecting New York and Atlanta, it will not be many years before it is possible to have a good road extending from New York to the Mexican border, passing en route through Atlanta, Jacksonville, Pensacola, Mobile, Baton Rouge, New Orleans, San Antonio and other important cities.

How the Gulf coast of the South and Florida will swarm with automobiles during the winter when these roads are ready for use. Talk about New England's \$90,000,000 annual tourist crop, that won't be in the same class with the South's winter tourist harvest.

Tomato Canning Factory Location Wanted.

A party having established a tomato canning factory in Maryland would like to locate a similar plant in one of the States bordering on the Gulf. Propositions from established plants that are for sale or from communities in a tomato-growing section having the necessary requirements will be considered. Address No. 688, care of MANUFACTURERS RECORD.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

AN EXPANDING SYSTEM.

Great Progress of Chesapeake & Ohio Under Edwin Hawley's Control.

The Chesapeake & Ohio Railway Co. has issued its thirty-second annual report, which covers the fiscal year ended June 30, 1910. The average main track operated during the year was 1936.9 miles, an increase of 40.3 miles. The operating revenues were \$31,237,168, increase as compared with 1909, \$4,606,451; total operating expenses \$18,936,699, increase \$2,569,861; net operating revenues \$12,300,470, increase \$2,036,599; gross income \$13,461,835, increase \$2,489,092; net income after the payment of interest, taxes, rentals, etc., \$6,290,486, increase \$2,278,359; surplus to credit of profit and loss after the payment of dividends, \$3,621,868; total amount to credit of profit and loss \$5,495,723, from which is deducted discount on bonds sold, premium paid on notes bought and adjustment of securities to conform to Interstate Commerce Commission classification, etc., \$3,581,773, leaving balance to credit of profit and loss \$1,913,950.

The total assets of the company are \$27,497,304, including cost of road and equipment at \$178,171,250.

President Stevens reviews the work of the year and says that the following were acquired: Coal River Railway, 69 miles; Raleigh & Southwestern Railway, 20 miles. The Coal River line has been extended nearly six miles, and a further extension of about 11½ miles is under way. The Raleigh & Southwestern is being extended 14 miles, and the Guyandotte Valley branch 21½ miles, to develop timber and coal tonnage. They should be completed and in operation during the fiscal year 1911. The president also refers to the acquisition of the Hocking Valley Railway, of which more than 75,000 shares are owned out of 110,000 shares of common stock; the 150,000 shares of preferred stock have been retired. There were also acquired more than 40,000 shares in the Kanawha & Michigan Railway out of a total of 90,000 shares outstanding, and the Lake Shore & Michigan Southern Railway owns an amount equal to that held by the Chesapeake & Ohio. Further reference is made to the purchase of the Chicago, Cincinnati & Louisville Railroad, which is now held by the Chesapeake & Ohio Railway of Indiana. This makes the distance from Newport News to Chicago 940 miles. The three lines thus acquired have mileage as follows: Hocking Valley, 350 miles; Kanawha & Michigan, 175 miles; Chicago, Cincinnati & Louisville, 285 miles. By these acquisitions the company is enabled to reach practically over its own line Lakes Erie and Michigan and the important cities of Columbus, Toledo and Chicago.

The company has completed 47.3 miles of second track work at various points, including nearly 28 miles from St. Albans to Barboursville. About 14 miles more at various points should be finished by December 31. There is also 67 miles of second track work under way on the Cincinnati division, most of which should be in operation by January. When the second track now building is finished the company will have two tracks from Newport News to Cincinnati, excepting nine miles in West Virginia and 48 miles in Kentucky, but if the present traffic continues it will be necessary to double-track the 48 miles during 1911.

Statistics show a liberal growth of traffic, coal and coke increasing 21½ per

cent. in a total of 15,549,977 tons, and other freight 28½ per cent. in a total of 7,342,252 tons; total tonnage 22,892,229, increase 23.7 per cent. Passenger revenues increased more than 11½ per cent. and freight revenues more than 19 per cent.

STEADY GROWTH EXHIBITED.

Nashville, Chattanooga & St. Louis Annual Report—Betterments Under Way.

The Fifty-ninth annual report of the Nashville, Chattanooga & St. Louis Railway has been issued. It covers the fiscal year ended June 30, 1910. The total earnings, covering 1230 miles operated, were \$11,637,263, as compared with \$11,122,114 for the previous year; total operating expenses \$8,437,258, as compared with \$8,350,700; net earnings from traffic \$3,199,945, as compared with \$2,771,413; percentage of expenses to gross earnings 72.5, as compared with about 75 last year; net earnings from traffic and other sources, \$3,559,149; net income after the payment of interest, taxes, rentals, etc., \$1,558,704; balance to profit and loss after payment of dividends, \$959,625.

The gross earnings of the road have increased in the past 10 years from \$7,620,127 to \$11,637,263. In the year ended June 30, 1907, the gross earnings were \$12,238,472, but they fell off the next year to \$10,738,252, since which time they have increased, the present year's earnings being greater than that of any other excepting 1907.

The company contemplates building a second main track from Craven's Yard to Whiteside, Tenn., nearly 12 miles, and on May 17 last a grading contract was awarded for a little more than eight miles between Wauhatchie and Whiteside, which is to be completed by February 1 next. The rest of the grading will be done by the company's forces. The advantage of this new track is that it will improve the alignment and do away with the tunnel on Racecon Mountain. Work is also under way on a second main track from South Cherry street, in Nashville, to Glen Cliff, a little more than three miles. A revision of line and grade are in progress at Bon Aqua, on the Centerville branch. The report also refers to the agreement with the Louisville & Nashville Railroad, the Southern Railway and others for the new union station in Memphis, for which plans have been made and contracts closed.

The company spent for betterments, equipment, etc., during the year \$583,737, including \$109,420 for freight equipment, \$45,958 for passenger equipment, \$93,903 for bridges, \$46,817 for buildings, \$45,845 for steel rails, \$51,283 for double tracks, \$82,865 for sidetracks, etc. There are now 251 locomotives, 232 passenger cars, 9684 freight cars and 488 service cars; total cars, 10,404.

The total assets of the road are \$34,369,330, including the cost of road and equipment at \$28,140,102.

New Equipment, Rails, Etc.

The Louisville & Nashville Railroad, says a dispatch, has just built 400 box cars at its New Decatur (Ala.) shops. The company will also build 200 ore cars.

The Bryan-College Interurban Railway of Bryan, Tex., has received two new large motor cars, seating 65 passengers each.

The Chesapeake & Ohio Railway, it is reported, has ordered 10,000 tons of rails from the Maryland Steel Co., Sparrows Point, Md.

The Chattanooga Railway, says a market report, has ordered 500 tons of rails from the Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

The Atlanta & West Point Railway will, it is reported, purchase two locomotives.

The Florida East Coast Railway, says a market report, has ordered between 7000 and 8000 tons of bridge steel from the American Bridge Co., New York, for viaducts on its Key West extension.

The San Antonio & Aransas Pass Railway is reported to have ordered four 70-foot combination cars, two of them from the Hicks Locomotive Car Works, Chicago, and two from the American Car & Foundry Co., St. Louis.

The Pennsylvania lines west are reported in the market for freight equipment.

The St. Louis & O'Fallon Railroad, says a market report, has ordered a freight locomotive, prairie type, from the American Locomotive Co., New York.

The National Iron & Steel Co., Houston, Tex., has purchased from the San Antonio & Aransas Pass Railway about 10,000 tons, or 100 miles, of relaying 52-pound rail, in place of which the company is laying 75-pound rail between Houston and Kennedy, Tex. The sale amounted to nearly \$250,000. The new rails are from the Birmingham mill of the United States Steel Corporation.

The Carolina, Clinchfield & Ohio Railway Co. is quoted as saying that bids have been received to build 250 box and 100 stock cars, and contract will probably be let soon.

The United Railways of Baltimore contemplates purchasing more pay-as-you-enter cars.

May Extend to New Orleans.

President L. S. Berg of the New Orleans, Mobile & Chicago Railroad, by invitation recently addressed representatives of the principal exchanges at New Orleans concerning the contemplated extension of his road to that city. He frankly said that there was no prospect of an immediate entrance, but that his company was reaching out for the Ohio River, and if the road was built that far north its earnings would be doubled. It was intended to ultimately reach Chicago, and thus reduce the distance between Chicago and New Orleans by about 60 miles.

It will take 100 miles of line from Beaumont, Miss., to New Orleans to make the desired extension to the latter city, and Mr. Berg said that its construction would cost \$2,000,000, but if the business men of New Orleans would subscribe \$1,000,000 thereof he could promise to have the rails laid, at least to the outskirts of the city, within 15 months. He further said that for each and every \$920 subscribed would be given a \$1000 5 per cent. bond and \$250 of capital stock in the railroad, exchangeable after the line was completed for securities of the main line par for par.

Among the representatives of the several exchanges who heard Mr. Berg's address there was manifested a general disposition to co-operate to obtain the desired extension of the railroad, and recent advices say that subscription lists will be opened.

The New Orleans, Mobile & Chicago Railroad now extends from Mobile, Ala., through Mississippi via Beaumont, Hattiesburg, Pontotoc and other points to Middleton, Tenn., with about 400 miles of track. The proposed extension to the Ohio River, which may reach either Paducah, Ky., or Evansville, Ind., will be about 175 miles long, and perhaps less.

Santa Fe Yards at Sweetwater.

Secretary R. A. Musgrove of the Sweetwater (Tex.) Progressive Club writes that the Santa Fe is building yards there. The land has been leveled, and work on the foundations for the shops has begun, besides grading for at least 30 miles of yard tracks. He says that the railroad company owns 1280 acres of land adjoining the corporate limits of Sweetwater, and the

right of way and depot grounds were donated by the citizens. The tracklaying is within four miles of town, but is delayed by the building of a large concrete bridge across Sweetwater Creek. This bridge and its approaches, he writes, will cost \$850,000.

Mr. Musgrove also comments on the recent denial by an officer of the Santa Fe system that the company would build yards at Sweetwater, although the work was already under way, but it appears that the denial was only technical, and was doubtless made in the haste of business. It referred to the Gulf, Colorado & Santa Fe, which is one of the divisions of the Santa Fe system. It appears that the work at Sweetwater, according to a later report, is being done by the Pecos & Northern Texas lines of the Santa Fe system, which is a company entirely separate from the other.

Large Yards at Little Rock.

A letter from Little Rock, Ark., to the MANUFACTURERS RECORD says that W. L. Reeves has completed his contract for grading the extensive yards of the St. Louis Southwestern Railway on the north side of the Arkansas River there. When the last furrow was handled the contractor had as his guest Secretary George R. Brown of the Little Rock Board of Trade. The large area which will be occupied by the railroad yards has been made as level as a billiard table, and is being covered with tracks as rapidly as possible. There will be 15 tracks, each about three-quarters of a mile long. A new roundhouse will also be completed within a week or 10 days.

On the work which has just been completed the grading machine was operated by 17 mules, and the earth was dumped into wagons beside the grader, taking two yards of earth every half minute.

Key West Extension.

The Florida East Coast Railway Co., it is reported, has directed the hastening of work to complete its extension from Knights Key to Key West, and it is expected that by next summer the road will be in operation, so that a through train service can be established between Key West and Jacksonville.

On the big viaduct across Moser channel 128 piers have been completed, and 25 more are nearly done out of a total of 170 piers. In addition to these, there will be a dozen arches. At Bahia Honda there is also arch work to be built; also other bridging at other points.

Work is in progress from both ends of the line, and at Key West the first train seen in that city entered several days ago. It was only a construction train, but it gave promise of the day when through service will be established.

Warehouse and Freight Shed.

The Louisiana Railway & Navigation Co., says a report from New Orleans, proposes to build a big warehouse in Liberty street, between Cypress and Julia streets. It will be two stories high and nearly 300 feet long, with sufficient depth for the requirements of traffic. The lower floor will be used for a warehouse and the upper floor for offices. It will be composed of brick, and will be fireproof.

President William Edenborn is also reported as saying that plans are being made for a long freight shed of steel at Carrollton avenue, on the New Basin. It will be completed this fall.

New Railroad in Texas.

Dispatches from Austin say that the Texas Railroad Commission reports that 976 miles of new line are actually under construction in that State. This includes 310 miles of the Pecos & Northern Texas

line of the Santa Fe system, 200 miles of the Kansas City, Mexico & Orient Railway, 104 miles of the Temple & Northwestern, 90 miles of the San Antonio, Rio Grande & Tampico, 65 miles of the Gulf, Colorado & Santa Fe of the Santa Fe system, besides others that are smaller. During the year ended June 30 there were 738 miles of new railroad completed in Texas.

Oberlin, Hampton & Eastern.

A dispatch from Lake Charles, La., says the Oberlin, Hampton & Eastern Railroad Co. has been granted a charter to build a line from Oberlin, La., to Nez Pique, which is about 20 miles, and construction work will begin immediately. The line will traverse a section that is now without railroad facilities. The capitalization (\$50,000,000), as reported, appears large for a small line. W. B. Williams is president; S. K. Williams, vice-president, and L. L. Williams, secretary-treasurer.

Railroad Notes.

James E. Young of Franklin county, Mississippi, according to a dispatch from Monroe, Miss., has invented an iron railroad tie.

The Seaboard Air Line, according to a report from Asheville, N. C., has had engineers making investigation for a route into that city, possibly from Rutherfordton, N. C. Nothing definite, however, appears to have been done concerning such an extension.

The Western Maryland Railway Co.'s statement for July shows increases as compared with the same month last year thus: Gross earnings \$635,116, increase \$90,059; operating expenses and taxes \$386,703, increase \$45,485; net earnings \$248,413, increase \$44,574; total income \$262,398, increase \$24,869.

J. G. White & Co., Inc., engineers and contractors, 43 Exchange Place, New York, have been awarded a contract by the New York, Ontario & Western Railway Co. for the erection of railroad shops at their Mayfield yards, Mayfield, Pa., near Carbondale. There will be eight buildings of the usual type of brick and steel construction. The estimated cost is approximately \$150,000.

Officers of the Santa Fe system are reported as saying that construction is rapidly progressing on the cut-off line in Western Texas from Coleman to Texico. Tracklaying is advancing fast, and permanent bridges are being erected in place of temporary structures. Nearly all of the depots are completed from Coleman to View City, and the telegraph wires are being erected.

St. Louis is to have another electric railway connecting with points in Illinois. It is the Southern Railway of Illinois, and it will enter St. Louis over the municipal free bridge. Grading has been completed between East St. Louis and Belleville, Ill. H. D. Mephram, Title Guaranty Building, St. Louis, is president. This will make three interurban lines entering the city, each by a different bridge.

A report from Hattiesburg, Miss., says that a movement is under way to connect Hattiesburg and Laurel by an interurban electric railway, the plan being promoted by capitalists of Hattiesburg and Laurel. The distance is about 30 miles, and it is said that the Hattiesburg Traction Co. would furnish current to operate the cars, as it has a considerable surplus of power. For several years there has been discussion of such a line, and it now appears that something definite is to be done.

Assessed values of property in Alabama this year are \$508,568,610, an increase over those of 1909 of \$24,418,426.

LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

A Warning to the Lumber Industry.

Mr. Leonard Bronson, manager of the National Lumber Manufacturers' Association of Chicago, in a letter to the MANUFACTURERS' RECORD, points out what he regards as a danger to the lumber interests likely to arise from the construction of the Panama Canal. He says:

"It is anticipated that the Panama Canal will be opened for business in a little more than four years from now, and it is not too soon to consider what its effect will be upon the lumber business of the United States.

"I do not wish to be considered a mere alarmist, but I feel that a serious situation will be created by this new avenue of trade and that serious damage to the lumber business threatens which can be avoided only by early and conservative action. The first essential is to arouse people to dangers that threaten them, so that they may take steps to avert those dangers.

"The canal is looked forward to by the great mass of lumber producers as likely to be of enormous benefit to them. Here I refer particularly to producers of what are known as the ordinary building timbers—in the eastern part of the country chiefly yellow pine of its different species, spruce, hemlock and some of the hardwoods; on the Pacific coast fir, spruce, redwood, etc. Most of the hardwoods are in a class by themselves, and the remaining supply of white pine of the better grades is so limited that it is not likely to be materially affected for good or ill.

"Yellow-pine lumbermen are expecting to find in the Panama Canal an outlet for their commodity to the west coasts of Mexico, Central America and South America, to Hawaii and the Orient. West coast lumber producers expect to find an enlarged market for their product in the eastern part of the United States, in Cuba, to some slight extent in the Atlantic ports of South America, and in Europe. Based on these anticipations, lumbermen of both sections look for a new era of prosperity in the lumber business following the opening of the canal.

"In my opinion, unless effective steps are taken to ward off the danger, the opening of the canal will be a calamity to the lumber business of the United States from which it will take years to recover.

"The present distribution of the lumber product of the United States is based on the established transportation costs on Western lumber and Eastern lumber, respectively. In both sections there is an overproduction or an overcapacity. There is plenty of lumber manufactured in the eastern part of the country for the needs of the Eastern consuming districts. There is more than a plenty of lumber manufactured on the Pacific coast for the needs of that section and of the territory which can be reached by rail. At a freight cost of 30 to 50 cents a hundred pounds on the Pacific coast lumber and of 25 to 37 cents a hundred pounds on yellow-pine lumber, the two grand sawmill divisions of the country meet in competition. The division of territory is not sharply defined, but approximately so, after many years of experiment and development.

"On January 1, 1915, or thereabouts, if confident promises are realized, a 35 to 50-cent transportation cost on West coast woods will cover practically the entire country; or, in other words, 75 to 85-cent rates will be reduced to 40 to 50 cents; and the prohibitive freight costs on the

shipment of Eastern lumber to the Pacific coast will be reduced to like proportions. There will then be a new scramble for territory, involving a readjustment of the fundamental principles governing lumber merchandizing.

"Yellow-pine producers will try to take away from the West coast producers, so far as the woods are competitive in use, their markets on the Pacific, which are responsible for even what measure of prosperity the West coast producers may have. The latter will try to take away from the Eastern mills some of their demand on the Atlantic, both domestic and foreign. Therefore, there will be a grabbing for trade territory which can only result disastrously as to prices and affect not only producers, but wholesalers and retailers as well, for there will be no dependable basis of values.

"But the threat to prices is not the only menace. There will be a tendency to overproduction, when, as a matter of fact, the demand will not increase. Lumber is now selling so near to cost at the mills in all parts of the country that a reduction is impossible without serious financial disaster. An increase of production with no increase in the demand, together with the spirit of adventure which is promoted by the fallacious hopes of increased prosperity, will make the struggle for trade and territory acute.

"Some may say that the eastern part of the country needs the West coast woods. It does not yet need them any more than the West coast needs the Eastern product. So long as lumber is in ample supply and can with difficulty be moved at prices which are hardly above the cost of production, there is no foundation for the claim that an additional supply is needed. Yellow pine may be at the zenith of production, or may even have passed it, but there will be no appreciable decrease for five years to come, and the canal is to be opened, they say, in four years and three months. Ten years from now the yellow pine output may be so lessened that West coast woods will be wanted; but such is not the case today, nor will it be the case when the canal is opened.

"So far as the well-being of the lumber industry is concerned, I fervently wish that the canal were not to be opened until 1920 at the earliest; but opened it will be, regardless of the wishes and welfare of any particular department of commerce. If lumbermen are wise, therefore, they will face the situation as it is to be and take measures accordingly.

"Some say that there is not a sufficient supply of vessels flying the American flag to take care of the business from coast to coast that will be fostered by the opening of the canal, but I believe it is not safe to trust to any such limiting influence on trade. There will be vessels enough when the time comes to do the business. What, then, shall the lumbermen do? Their first duty is to think, to study the situation in its broader aspect, to agitate, to organize. They must organize for self-protection, to protect the security of their investments, to save themselves from bankruptcy. But it is objected that the law will not allow them to organize. Then the law must be changed, and if that be impossible, there must be such a campaign of education carried on among all the lumber producers of the United States that no man of them all will dare to overstep the sharp borders of wise business conservatism indicated by a study of the facts.

"We should remember that the per capita consumption of lumber in the United States is probably decreasing. Consumption year after year is equal to production. In 1899 the lumber product was 35,000,000,000 feet. It rose to 40,000,000,000 feet in 1907—due rather, so far as the fig-

ures are concerned, to a more complete census than to actual increase in cut—but it dropped in 1908 to 33,000,000,000 feet; and in 1909, though the record is not yet complete, it is improbable that the cut equaled that of 1908. Yet during this time the population of the country has increased from 84,000,000 to 90,000,000. If it be a fact, as seems probable, that the per capita consumption is now decreasing, it will continue to decrease, and probably in an accelerated ratio. Yet the possibilities of lumber production, estimated on the total available capacity, are increasing, and will not show any important decrease for some years to come. It ought to be a crime in lumber trade ethics for any more sawmills to be built during the next five years.

"I offer no solution of the problem—no certain protection against the dangers that threaten the lumber industry. At this time I wish as strongly as possible to call the attention of the lumber industry to the dangers involved in the crucial period approaching, when the opening of the Panama Canal shall upset all present trade adjustments, so far as the lumber business is concerned. I do this in the hope that the wisdom of this great industry may be able to devise some means for mutual protection.

"Other threats are foreshadowed in considering the effect of the canal on the lumber business. So far as foreign trade in lumber is concerned, our shipping laws do not affect it; but in our domestic trade the law which requires that all commerce between American ports shall be carried on in American bottoms is going to give a tremendous, even if a temporary, advantage to our competitors in Canada. Either our shipping laws should be amended or the government of the canal should be amended. In the latter case the preference should be given to American vessels or to American products. Is it said that treaties forbid? Perhaps so, but no treaty can stand that threatens the physical or commercial welfare of a great country like the United States. In my opinion, the free gift of the canal to the commerce of the world is a piece of altruism which goes beyond anything in reason. It looks very much as though the promoters of the canal project were so anxious to do a big thing that they ignored questions of substantial equity and common sense. The Panama Canal will be in fact a double canal. It will be a world canal, accommodating the commerce of the world, and in that respect we should be neutral, favoring no other nation; but it will also be an intercoastal canal—a purely domestic affair. In that respect, and so far as our purely domestic trade is concerned, we should no more be asked to open it free of restrictions than the Mississippi or the State of New York should the Erie Canal.

"But to go back to the original proposition. Unless the lumbermen of the United States abandon their attitude of careless optimism, of fatuous hope, regarding the benefits to be received from the canal; unless they fully realize the gravity of the situation that confronts them and grapple in dead earnest with the problem, and unless they are successful in solving it, the lumber industry of the country and the cause of forest conservation will receive a blow from which it will take a generation to recover."

Consumption of Firewood in the United States.

In a bulletin covering the "Consumption of Firewood in the United States," recently issued by the Government Forest Service, Albert H. Pierson, forest assistant, reports that a little more than 20,000,000,000 cubic feet of wood in all forms is used in the United States each year, and of this, 7,000,000,000 cubic feet, or about

one-third, is firewood. The amount of wood consumed as fuel is exceeded only by that put into the form of lumber and shingles.

During 1908 the total estimation of consumption of firewood was 86,000,000 cords, valued at \$250,000,000 at the point of consumption. Of this total, 70,000,000 cords, or 81.4 per cent., were used on farms, the average value being \$2.61 per cord; 12,615,000 cords, or 14.7 per cent., in towns and cities with a population of from 1000 to 30,000, the average value being \$4.01 per cord; 1,615,000 cords, or 1.9 per cent., in cities of over 30,000 population, the average value being \$6.88 per cord, and the remaining 2 per cent. in mineral operations. These figures do not include the firewood used by railroads, steamboats or in miscellaneous manufactures, although these items amount to a considerable quantity in some parts of the country, nor do they include the large amount of waste wood that is used in and around woodworking factories. The local consumption of wood for operating cotton gins, sugar and sorghum mills, thrashing machines and similar plants is very large, and is covered only in part by the figures for fuel used in the towns and on the farms.

In the quantity of firewood used on the farms, Tennessee, with 4,420,976 cords, was the leading State, followed by Georgia, Alabama, North Carolina, Arkansas, Mississippi, Missouri, Kentucky and Virginia. These nine States together consumed about 35,000,000 cords, or 50 per cent. of the total quantity used on farms. The aggregate value of the wood used for fuel on the farms in these States was \$64,938,557, or 26 per cent. of the total.

The quantity of firewood used on the farms varies greatly between different parts of the country on account of a number of influences, such as climate, the distance from coal fields, the development of transportation facilities, and the progressiveness of the consumers. The number of villages and towns under 1000 population in a region also affects the figures under this head. Except in the Pacific Coast States and in Arkansas, Louisiana and Missouri, the consumption per farm west of the Mississippi River is comparatively small. The States north of the Ohio River use rather less firewood per farm than those south of it. Though this may at first glance seem strange, because the climate of the Northern States is colder than that of the Southern States, it is explained largely by the fact that in the North stoves burning coal or wood are commonly used, while in the South open fireplaces are more general. Not only is relatively little coal used in the South, but fireplaces require large quantities of wood for the amount of heat produced. The effect of open fireplaces in increasing the fuel wood consumption in the South is further strengthened by the large number of tenant-houses and cabins in the large plantations. In the New England States and in the South Atlantic States rather more wood is used per farm than in the Middle Atlantic States, which are within a short distance of fine coal fields and which have good transportation facilities.

Of the firewood used in towns and cities with less than 30,000 population, only Texas and Michigan reported more than 1,000,000 cords. The figures for this class were based on a per capita consumption. Nearly 3000 towns of from 1000 to 30,000 population were heard from, and the firewood consumption of the remaining towns in each State was estimated from the per capita consumption of the towns which reported.

Of the wood used in cities of over 30,000 population, the seven States of Washington, Texas, Oregon, Massachusetts, Michi-

gan, Minnesota and New York, ranking in the order named, reported an aggregate consumption of 1,021,304 cords, or 63.3 per cent. of the whole amount used in such cities. The wood used in the large cities of these seven States had a value of \$6,821,454. It should be noted that with the exception of Texas, Michigan and New York, none of these States is very near large coal fields.

The amount of firewood used in mineral operations was only 2 per cent. of the total quantity used in the United States. This does not include any timber or cordwood used for shoring or timbering the mines, but only the amount burned. Of the fuel wood used in mineral operations, nearly three-fifths was consumed by manufacturers of clay products. The only States which reported a use of more than 100,000 cords of firewood in mineral operations were Florida and North Carolina. This was due in the former State to the large quantity reported as used in miscellaneous operations, and in the latter to the importance of the use of wood in the manufacture of clay products.

The estimates in this circular are based upon information obtained from inquiries sent to more than 48,000 county and crop correspondents of the Bureau of Statistics, Department of Agriculture, supplemented in towns and cities of from 1000 to 30,000 population by inquiries through representative firms engaged in the coal and wood business or along some line of forest products, and in cities of over 30,000 population by reports of special agents of the Bureau of Census. In this first attempt of the Forest Service to obtain statistics of fuel wood there has been no effort to separate the kinds of wood, nor even the hardwoods from the softwoods.

To Develop Virgin Timber.

It is announced from Lynchburg, Va., that George Myer and George Myer, Jr., both of New York city, have completed 12 miles of railroad into a timber tract of virgin hardwood in Bedford and Franklin counties, Virginia, preparatory to beginning active development. The property contains white oak and poplar, and it is estimated that 20,000,000 feet will be shipped from it, and ultimately, it is said, 50,000,000 feet will be accessible. The Messrs. Myer are reported as contemplating the construction of 40 or 50 miles additional railroad, extending in branches from the line already constructed into the forests. They have installed a sawmill of 30,000 feet daily capacity. The Ward Lumber Co. of Lynchburg has secured the exclusive sales agency for the lumber, and states that it expects to begin shipments at once.

Turpentine by Destructive Distillation.

Reports state that the Michigan Turpentine Co. of Bay City, Mich., has ordered a carload of pine slabs from the Stearns & Culver Lumber Co. of Bagdad, Fla., for the purpose of experimenting in producing turpentine by destructive distillation. It is announced that upon the result of the experiment will probably depend the erection of a plant at or near Bagdad similar to the one which the Michigan company is operating at Bay City.

Dalton Lumber & Tie Co.

Organized with a capital stock of \$500,000, the Dalton Lumber & Tie Co. of Gibsland, La., will probably develop timber lands in that State. Officers of the company are J. L. Dalton, president; Drew Davis, vice-president, and J. E. Reynolds, secretary-treasurer.

Lumber Notes.

The Haw Creek Turpentine Co. of Jacksonville, Fla., has organized, with a capital

stock of \$50,000, to operate in Florida and other States. Its officers are: Lee B. Jones, president; W. N. Mattox, vice-president and general manager, and J. C. Reynolds, secretary and treasurer.

The Mathews Lumber Co. and W. C. Redding have consolidated under the name of the Redding-Mathews Lumber Co., 16 and 17 Washington Block, Macon, Ga., for handling long leaf yellow pine lumber and lumber products. These include flooring, ceiling, siding, shingles, laths, railroad, bridge and car material, etc.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

The Clifton Cotton Mills.

The Clifton Cotton Mills of Newport, Tenn., has organized with J. A. Fisher, president, and W. D. McSween, secretary-treasurer. This company was mentioned recently as chartered with \$25,000 capital stock to acquire an established plant. The latter is the Bellevue Cotton Mills, equipped with 2640 ring spindles, 544 twister spindles, etc.

Adding to the Gluck Mills.

The Gluck Mills of Anderson, S. C., will expend from \$30,000 to \$40,000 to install 3000 spindles, boiler and condensing equipment. Contracts have been awarded. This company now has 32,000 ring spindles and 672 narrow looms, and the latter will weave all the product of the present and additional spindles.

For Mill and Power.

D. L. Culpepper of Spring Hope, N. C., is interested in a plan to form a company for developing a water-power and building a cotton mill. The power is in Tar River, six miles from Spring Hope, and is estimated to furnish 1000 horse-power.

A Texas Company.

The Texas Cotton Mill Co. of McKinney, Tex., has been incorporated with \$190,000 capital stock by J. P. Burrus, J. L. White and J. P. Crouch.

Textile Notes.

C. K. Taylor of Natchez, Miss., is reported as planning the erection of a cotton mill at Fort Worth, Tex.

A company has been organized, it is reported, with P. D. Anderson as president and M. A. Wert as secretary, to build a cotton mill at Lawton, Okla.; capital stock \$400,000.

A. H. Richardson of Ansonville, N. C., is reported as planning the organization of his proposed \$1,000,000 stock company for building a cotton mill to be operated by electricity from the water-power-electrical plant which he plans constructing near Kendall Ferry, on Rocky River.

Mr. J. L. Knoepfler, secretary State immigration office, New Orleans, advises the State Board of Agriculture and Immigration that L. A. Hagg of Kansas City has purchased 14,800 acres of land in Louisiana for development.

The steamer El Occidente, the last of four built for the Southern Pacific Steamship Co., has been launched at the Newport News Shipbuilding plant.

MINING

Increased Coal Production.

Mine operators and merchants in the Birmingham district estimate that the supply of coal mined and sold in the district this year will exceed any previous year's production by from 2,500,000 to 3,000,000 tons. This opinion, it is said, is held by James Hillhouse, chief mine inspector, and Robert Neill, associate mine inspector, as well as others. In explaining the situation Mr. Neill is reported as saying that the mines will operate three or four months longer this year than last. Last year the depression caused a suspension at a number of mines, while a great many others worked only half or two-thirds of the time.

To Develop Lead and Zinc Deposits.

A dispatch from Marrowbone, Ky., states that E. J. Reidy of Bradford, Pa., representing Eastern capitalists, has leased several thousand acres of land in the eastern part of Cumberland county and in Russell county for the purpose of developing a vein of lead and zinc, beginning near Creelsboro, Russell county, and supposed to pass entirely through Cumberland county. It is stated that arrangements are being made to test the vein with a diamond drill.

Buys 6000 Acres of Coal Lands.

The Linton Coal Co. has incorporated at Birmingham, with a capital stock of \$111,000, for the purpose of developing coal lands in Jefferson and Blount counties, Alabama. The company has purchased 6000 acres of lands in these counties, at an estimated price of \$500,000, and it is understood that the development will soon be undertaken. Among the directors of the company are L. C. Hayne, F. E. Fleming, P. S. North, J. W. Sibley and Bolling Sibley, all of Augusta, Ga.

With \$500,000 Capital Stock.

Capitalists of Uniontown, Pa., have incorporated the Grave Creek Coal & Coke Co. of Moundsville, W. Va., with an authorized capital stock of \$500,000 for the purpose of developing coal lands and making coke. Among the incorporators of the company are Jasper Cope, William C. Black, D. M. Higginbotham, William Jones and Joseph Kerr.

Jewell Ridge Coal Corporation.

The Jewell Ridge Coal Corporation of Tazewell, Va., has incorporated with an authorized capital stock of \$200,000 to develop coal lands in that vicinity. George W. St. Clair of Tazewell is secretary and treasurer of the company, and among others interested in the enterprise are Thomas M. Righter of Mt. Carmel, Pa., and W. A. Scott of North Tazewell, Va.

The Del Carbo Coal & Coke Co. of Logan, W. Va., has been incorporated with a capital stock of \$100,000 by Jacob Sherman, J. F. Sherman, W. H. Bailey, G. Kentry and J. K. Kentry.

Erecting Plant at Montgomery.

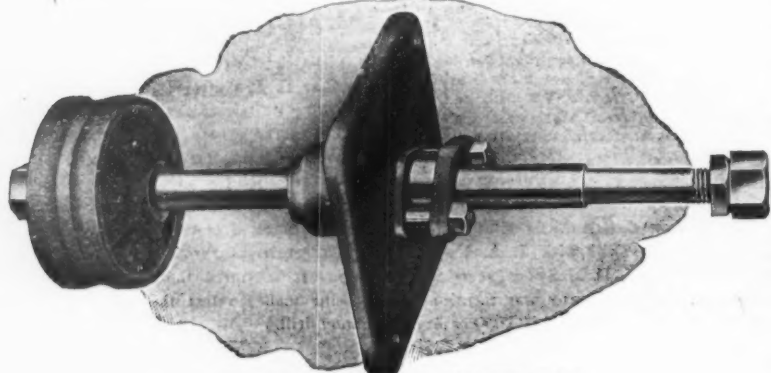
In connection with the erection of its plant at Montgomery, Ala., which is in course of construction, the F. S. Royster Guano Co. of Norfolk states that it is erecting what is known as an A-frame or batter shed type structure, 181.7x252 feet, the building to be entirely of frame construction, covered with three-ply ruberoid. The contract price was \$14,000. It is expected that the plant will be completed in time for next spring's trade, and its capacity will be from 450 to 500 tons per day.

MECHANICAL

"Pyramid" Double-Acting Piston Pump.

The rapid extension of electric-power circuits and the introduction of gas and gasoline engines affords ideal power and opportunity to economically install a medium-priced power pump for general water supply or other pumping duties.

To meet the demand for a compact horizontal double-acting power pump which would possess superior advantages in point of simplicity, durability and general efficiency over other pumps of this class, the Goulds Manufacturing Co. of Seneca Falls, N. Y., has placed on the market "The New Pyramid" double-acting piston pump.



CYLINDER HEAD OF "PYRAMID" PUMP.

which is an evolution from the company's original pump of the same name, but designed along similar lines. The waterways have been largely increased and made more direct. It is much more compact, its general construction much more rugged and its efficiency greatly increased. See three accompanying views.

The base, cylinder, bearings and one cylinder head are cast integral, giving a remarkably stiff and rigid construction. One cylinder head being cast on to the cylinder, removes all possibility of leaking and blowing out the packing at this point. Casting the bearings as a part of the cylinder keeps the gearing absolutely in line, greatly decreasing the wear and propor-

tionately increasing the life of the pump. The cylinder is brass-lined, and is provided with large suction valves just below the bore of the cylinder. These valves are easily accessible through two hand holes, the covers of which can be removed by backing off one bolt. The discharge valves are above the cylinder, and reached through hand holes located at either side of the air chamber. To remove the hand-hole

plates, it is simply necessary to loosen one bolt, slip this bolt out of place, freeing the clamp holding the valve cover in position. With this construction there is possibility of the valve cover caps rusting into position. On the forward end of the cylinder are cast two substantial lugs. Into these lugs are pressed and secured by heavy nuts two carefully machine-turned steel rods to act as a guide for the crosshead. This construction takes the lateral strain from the cylinder head and eliminates the tendency to work out cylinder head packing.

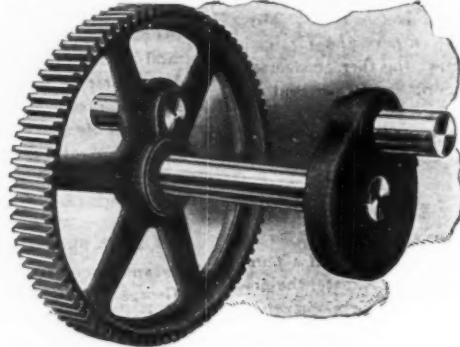
The front cylinder head is so machined as to have a large projection fitting into a corresponding recess in the cylinder, and as this projection is turned at the same

direction makes it possible to operate the pump for months without oiling at this point. Both gear and pinion are cast iron, machined all over; the teeth are cut from the solid metal, insuring quiet operation and long life. The pump is geared 5 to 1. The crank bearing cast on the rear end of the pump is of ample size, and provided with a large oil pocket and cap. Both crank and pinion shafts are of high carbon steel, carefully finished all over. All bearings are lined with high-grade bearing metal. The piston rod is of high-carbon steel, brass-cased.

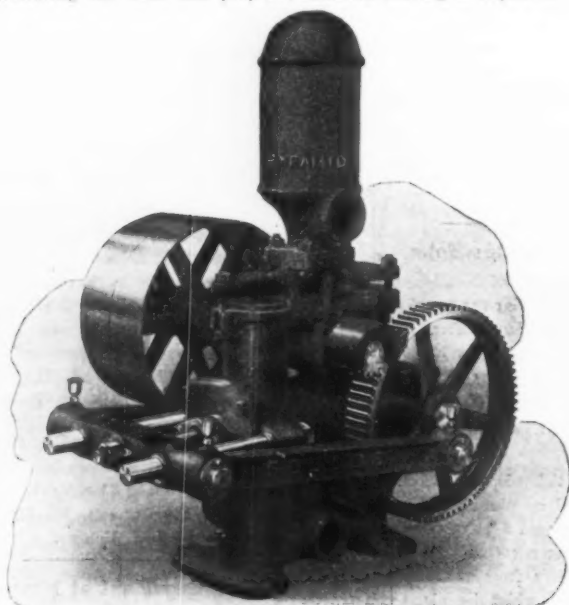
The general construction of the pump is such that it combines ample power and large capacity in the most compact form. Its over-all dimensions are smaller than those of any similar pump of the same capacity and strength. Its large and easy waterways, few parts and high-grade construction strongly recommend it as a leader in its class.

The "Pyramid" offers an ideal outfit where pumping of almost any kind is desired up to 75 pounds pressure or 175 feet elevation. General water supply, including tank pumping for farms, county estates, railroad water stations, irrigation, light, oils, kerosene, gasoline and spraying trees. Where a large and constant supply of water is necessary for the farm or country estate the "Pyramid" can be profitably used, and small gas or gasoline engines or

base of the stand is mounted at one side of the railroad track adjacent the switch with which the apparatus is connected, and mounted on the base and supported in upright positions thereby is a standard to turn with the opening and closing of the switch for displaying the signals. The standard is arranged in a vertical opening in the bottom of the base, and is locked against turning movement when the collar is in normal position. Fulcromed on the standard is an operating lever, which is connected with the lever and collar by links, the lever and collar being so arranged that the latter can be raised out of the socket when the signal-carrying standard is to be turned for opening or closing the switch, there being a coupling device on the lever end of the standard for connecting the same with the rod attached to the switch points. The lower end of the standard is preferably square, and extends through a correspondingly-shaped opening in the collar, so that when the collar is seated the standard is incapable of turning. On the collar is a locking tug which is intended to automatically catch in a locking device carried by the lever. On the upper end of the standard is a lamp, and below the lamp are two sets of wings, which indicate, respectively, when thrown to full view position, that the switch is closed or open. The lamp is provided on two opposite sides with white lenses, and



GEAR AND CRANK PLATE OF "PYRAMID" PUMP.



"PYRAMID" DOUBLE-ACTING PISTON PUMP.

tionately increasing the life of the pump. The cylinder is brass-lined, and is provided with large suction valves just below the bore of the cylinder. These valves are easily accessible through two hand holes, the covers of which can be removed by backing off one bolt. The discharge valves are above the cylinder, and reached through hand holes located at either side of the air chamber. To remove the hand-hole

half of this pinion shaft bearing is made extremely long, and is provided with an auxiliary cap at the outer end next to the pulleys, which gives a second bearing for supporting the shaft. This cap is arranged with a large oil pocket, which is readily filled by raising the cover between the main bearing and the auxiliary bearing; oil from this reservoir being fed to the bearings by means of wicks. This con-

struction makes it possible to operate the pump for months without oiling at this point. Both gear and pinion are cast iron, machined all over; the teeth are cut from the solid metal, insuring quiet operation and long life. The pump is geared 5 to 1. The crank bearing cast on the rear end of the pump is of ample size, and provided with a large oil pocket and cap. Both crank and pinion shafts are of high carbon steel, carefully finished all over. All bearings are lined with high-grade bearing metal. The piston rod is of high-carbon steel, brass-cased.

Big Order for "Acme" Culverts.

The Canton Culvert Co. of Canton, O., reports a recent sale of several hundred linear feet of 60-inch diameter "Acme" (nustable) corrugated galvanized "No-Co-Ro" metal culverts to a prominent engineering and contracting concern in New York for use as an intake from a crib to an electric power-house on the bank of the Connecticut River.

Upon investigation, the engineer in charge found it a practical and simple matter, by reason of the characteristic construction of the "Acme," to calk the lateral flange-joints with an inexpensive waterproof cement, making the culvert sand-suction tight, and also facilitating installation through the convenience of setting up the culvert in 20-foot break-joint lengths on the river bank, transporting these on a scow and lowering them for divers to join these together under the water. This is a feature in "Acme" (nustable) culverts worthy of consideration by engineers having similar projects in view, and the company will be pleased to give full information upon request.

An Automatic Switch Stand.

An automatic switch stand for railroad track switches, which is designed to display signals by which engineers on approaching trains can ascertain the conditions of the switch, has been invented by H. H. Lloyd of Macon. This device is claimed to be thoroughly reliable and efficient in use, readily manipulated and inexpensive to manufacture and install. The

electric motor are recommended for this purpose.

On the other two opposite sides with red lenses to indicate the open and closed position of the switch at night. An auxiliary signaling device is employed to show that the lock and operating lever have been tampered with. On the collar are formed depending members disposed at opposite sides of the standard, and under the lower ends of the members are springs, which rest upon the abutments on the standard, the springs being under compression when the operating lever is in locked position, so that in case the locking device of the lever is broken the lever will be thrown to raised position. Attached to the lever are actuating rods arranged at opposite sides of the standard and slidably mounted in guides on the latter, and on the upper ends of the rods is a signal device, which is provided with red lenses intended to cover the white lenses when the operating lever is raised by the spring. Mounted on the standard is a semaphore, which swings on a pivot and is connected by a link with one of the actuating rods, so that as the rods are raised the semaphore will be thrown to outstanding position. This will warn the engineer of an approaching train in the daytime that the switch has been tampered with, enabling an inspection to be made before the train passes the switch, while the signal device serves as a warning by night for the same purpose. The patent rights on this automatic switch stand are controlled by Jerome S. Brown, Box 403, Macon, Ga.

Gas Producers for Reducing Coal Bills

The Gibbs Gas Engine Co. of Atlanta, Ga., in sending to the MANUFACTURERS RECORD some bulletins descriptive of its

soft coal gas producers for power and for furnace work, writes:

"You will doubtless be interested in these bulletins, because ours is the first Southern company manufacturing gas producers and because of the great field in the South for this product.

"A great deal has been published about gas producers for power, because this is the most sensational type of producer, effecting, as it does, a saving of two-thirds of the coal bill in comparison with the average steam installation, but, strange to say, Southern industries have failed to recognize the possibilities of the furnace gas producer.

"Furnace producers are now standard for steel furnaces and rolling-mill furnaces for billets. The field, however, is not limited to the steel industry. Brick kilns, limekilns, glass furnaces and similar plants can utilize the gas producer to effect a saving of about one-half of coal and labor necessary with antiquated direct firing methods, and the investment necessary is very small indeed.

"Any interest you may manifest will be of benefit to all gas producer manufacturers, and of still more benefit to industries which are buying twice as much coal as they really need. There is nothing freakish about the gas producer as constructed by reliable manufacturers, and gas-producer plants of most approved design are dependable for continuous and reliable service with commercial bituminous run of mine coal, and without expensive attention."

The Diesel Engine.

In the MANUFACTURERS RECORD of October 27, 1904, there was published a letter from James T. Fuller, a Texas mechanical engineer, who, writing from Providence, R. I., gave some particulars in regard to the Diesel engine which he had just been studying in the shops at Providence, where these engines were being built. Some of the claims made for the Diesel engine by Mr. Fuller may have seemed to our readers greater than the facts justified, but the recent announcement that the Hamburg-American Steamship Line has made a contract for the installation of the Diesel engine in an 8000-ton freight ship, now under construction, calls the world's attention to the claims then made for the internal combustion engine of the Diesel type. Commenting on this situation, the *Boston Monitor* says:

"An intelligent estimate of the distance that must be traversed before the requirements of one of the great modern liners can be met in gas-engine development may be had from the fact that while the two engines of the new vessel will have 3000 horse-power, it requires 70,000 indicated horse-power to drive the *Mauretania*. At the present moment there is no excuse for unmeasured enthusiasm in behalf of the gas engine. The important thing is that it is now to be experimented with in a larger way than ever before, and that this experiment may lead to marvelous changes in ocean ship construction and propulsion. There will be no smokestacks, and if gasoline should finally be used, there will be no coal bins. And there will be no smoke. The stoke hole and the stoker will be things of the past. Heat will be reduced to the minimum. Sailing over the dark blue sea will be quieter, cleaner and altogether more comfortable. The world's greatest mechanical engineers are today giving largely of their attention to the development of the gas engine. Improvements are being made with great rapidity. So concentrated is the inventive and mechanical mind upon this one subject that it would be folly to regard as final any step in the development of the gas engine at present."

And to this the *Houston Post* adds:

"The consequences to the human race in the successful substitution of this character of engine in all ocean navigation, thereby releasing the immense supplies of coal now used from that form of consumption, would be momentous indeed; and if the benefits were rightly distributed would mean a great gain for the masses, as every new discovery in science and triumph in invention should mean."

Transportation for Inaccessible Mining Developments.

There are many places in the South where mineral deposits, such as coal, iron

mines to the tipples adjoining the railroad siding, a distance of about one mile.

As shown in the two accompanying views, this system consists of a series of iron posts resting on concrete foundations and capped with malleable iron Ys, which support insulated steel rails. The elevation varies from a few feet near the mine to 31 feet at the foot of the mountain. By using iron posts of various heights the grade from the mine to the railroad was built without any grading being necessary. The electric motor cars take the current directly into the motors from the rails on which they travel, thus doing away with



AUTOMATIC TRANSPORTATION LINE, NEAR THE MINES.

ore, etc., cannot be mined economically because of the distance from the railroad and the great cost of building a branch line to the nearest one. In view of this, it is interesting to note how a similar condition was overcome in Pennsylvania by the installation of an electric automatic transportation line by the Automatic Transportation Co. of Buffalo, N. Y.

an overhead trolley or a third rail. The point of contact is in a V-shaped groove on the under side of the rail, thus making it possible to operate the line under all weather conditions.

The coal is transported in trains consisting of two motor cars with a carrying capacity of one ton, and four trailers with a capacity of one and one-half tons each. The trains can either be controlled by an



POWER HOUSE AND TIPPLES, AUTOMATIC TRANSPORTATION LINE.

At Blossburg, Pa., the Jenkins Bros. and Nowak Coal Co. own coal deposits which could not be properly developed owing to the almost insurmountable difficulties in the way of getting the coal out to the railroad. After various investigations they decided to install the system above mentioned, extending from the mouth of the

operator riding with it or automatically without an operator. At present 300 tons per day are being shipped on the above installation, but the line has been so constructed that 1000 tons can be handled.

This system was installed under the supervision of Wm. C. Carr, its inventor and president of the Automatic Transportation Co.

Machinery for Handling Materials.

It is always interesting to study how different manufacturing plants handle economically their raw materials. In nearly every one of them it is possible to install equipment that will not only facilitate the rapid handling of its materials, but will also enable it to be done with the least labor and at the lowest cost. There are a number of manufacturing firms that now make a specialty of furnishing such equipment to plants and adapting it to meet the special requirements of any particular plant. Such a company as this is the Mead-Morrison Manufacturing Co., Cambridge (Boston), Mass.

In addition to making coal-handling machinery, this company also makes the McCaslin overlapping gravity bucket conveyor, which has been especially designed for conveying coal, ashes, cold or hot cement clinker, and similar materials. In order to give some idea of the adaptability of the McCaslin conveyor to plants of all kinds the company has published catalogue No. 16, and no recital of the merits of this conveyor could be so convincing as the illustrations presented. These illustrations show plants of various kinds located in all parts of this country and in Canada and England. Each view is accompanied by a short description setting forth the particular requirements of the plants and how they were met by the installation of the McCaslin conveyor and other Mead-Morrison machinery. In the various plants referred to in the book over 28 miles of McCaslin conveyor, which, in turn, represents 112 miles of conveyor chain, were installed. If all of these conveyors were in operation at once they would have a capacity of 12,000 tons per hour; at 50 tons per car, this would be equivalent to a capacity of 240 modern steel coal cars or six solid freight trains of 40 cars to the train.

The installations represent many of the large industrial plants of the country, and this fact in itself reflects the efficiency, durability and low maintenance cost of the Mead-Morrison equipment. Included in these plants are a number of large steam power plants. In each a large volume of coal is handled daily, and as so many industries are dependent upon these plants for their power, it is imperative that the equipment installed should operate steadily, otherwise it might compel many plants to shut down.

Other illustrations include a number of important Portland cement plants where the McCaslin conveyor is used for handling both hot and cold clinker; also the installation of this conveyor in several iron plants for covering oxide of iron nodules.

The catalogue contains 155 pages, is printed in several tones on heavy glazed paper, and is attractively and durably bound. In connection with its production it is interesting to note that, including the collection of about 90 per cent. of the photographs, the book was produced in its entirety in about six months. It was written, designed and printed under the supervision of Ray D. Lillibridge, Inc., New York.

In connection with the machinery which it manufactures, the Mead-Morrison Manufacturing Co. will co-operate with prospective purchasers in solving any conveying problems in their plants.

Brobston & Co. of Jacksonville, Fla., are reported as having sold to E. A. Benson of Omaha, Neb., 56,000 acres of land in Bradford and Alachua counties, Florida. It is understood that the Nebraska buyers will develop this land for farming purposes.

Construction Department

TO OUR READERS!

In order to follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and when this is necessary the statements are made as rumored or reported, and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be shown on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular.

"In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned."

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year. On all advertising contracts in the Manufacturers Record for three months or longer a subscription for the contract period to the Daily Bulletin is included.

BRIDGES, CULVERTS, VIADUCTS

Ark., Little Rock.—St. Louis, Iron Mountain & Southern Railway, M. L. Byers, chief engineer, St. Louis, Mo., and Chicago, Rock Island & Pacific Railway, J. B. Berry, chief engineer, Chicago, Ill., will construct viaduct over tracks on West 14th St.

Ark., Texarkana.—St. Louis Southwestern Railway, F. H. Britton, general manager, St. Louis, Mo., submitted plans to city officials for proposed viaduct to be constructed to connect city proper with Carmichael Hill, spanning railroad yards and tracks at Oak St. crossing; viaduct about 1500 feet long, costing \$200,000.

Mo., St. Joseph.—City will construct viaduct or subway on South 6th St. to cross railroad tracks north and south of union passenger station; Board of Public Works, George F. Barnes, clerk, will receive competitive plans until 11 A. M. October 15; plans are to be in shape of general sketches showing mode and system of construction, outline specifications and conservative estimate of cost; competitors to state terms for service in case plans are accepted; terms to include all surveys, plans, specifications and supervision; Alfred Meier, president Board of Public Works.

Miss., Yazoo City.—Yazoo county will construct three bridges—one near Carter, two near Holly Bluff and one over Newman Creek; contracts will be awarded October 3; S. S. Griffin, clerk. (See "Machinery Wanted.")

Okla., Calvin.—J. J. Harrison, chief engineer Missouri, Oklahoma & Gulf Railway, Durant, Okla., states plans and specifications

are not completed for construction of bridge across Canadian River. (Recently noted.)

Tenn., Memphis.—Shelby county will construct 140 feet of steel viaduct on Brunswick and Covington Rd., about one mile from Brunswick, Tenn.; bids will be received until October 3; St. George Richardson, County Engineer. (See "Machinery Wanted.")

Tex., Burnet.—Burnet county will vote October 22 on issuance of \$18,000 of bonds for construction of two bridges across Colorado River at locations to be determined later; structures will be built jointly by Burnet and Llano counties. Address County Commissioners.

Tex., Del Rio.—Valverde County Commissioners awarded contract to John Taint to construct concrete causeway across San Felipe Creek; structure will be 180 feet long and 40 feet wide; central roadway 30 feet wide and sidewalk 5 feet wide on each side; four arches to rise 15 feet above ordinary water level; brick, stone, cement and concrete; cost about \$10,000; construction begun. (Previously mentioned.)

Va., Princess Anne.—Bids will be received until October 10 at clerk's office for construction of wooden drawbridge 190 feet long at West Neck; cost \$1900; P. St. J. Wilson, State Highway Commissioner, Richmond, Va. (See "Machinery Wanted.")

W. Va., Wheeling.—Road and bridge committee of County Engineers instructed A. S. Bell, County Road Engineer, to prepare plans and specifications for rebuilding Bethany pike bridge.

CANNING AND PACKING PLANTS

Ala., Russellville.—D. H. Hargett and others are interested in establishment of plant to can sweet potatoes; contract awarded to Henry McDonald, Huntsville, Ala., for erection complete; cost \$7500.

Tex., El Paso.—Morris & Co., Chicago, Ill., applied for franchise to establish packing plant, cottonseed-oil mill, etc.; plans to expend \$1,000,000 within year.

Tex., San Benito.—N. J. Hitz, representative, Madison, Ind., proposes to establish \$60,000 cannery.

CLAYWORKING PLANTS

Ga., Savannah.—Savannah Brick & Fuel Co. incorporated with \$25,000 capital stock by Benjamin Rothwell, Gurney W. Milliken, Charles Flindley and others.

S. C., Columbia.—Bricks.—Granite Brick Co. will increase capital stock and manufacture brick paving, drainage tiling, etc.

Va., Emporia.—Andrews Caoutchouc Brick Co., 40½ Sycamore St., Petersburg, Va., previously reported incorporated with \$100,000 capital stock, will establish plant to manufacture paving brick, etc.; location of plant not yet decided upon; may locate at Emporia; machinery to be installed will cost \$10,000. (See "Machinery Wanted.")

Va., Fredericksburg.—Brick.—Southern Brick Co. incorporated with \$5000 capital stock; Granville B. Smith, president, Fredericksburg; B. C. Dickinson, vice-president; E. L. Jones, secretary-treasurer, both of Hicks Store, Va.

COAL MINES AND COKE OVENS

Ala., Birmingham.—Linton Coal Co. incorporated with \$111,000 capital stock by F. E. Fleming, L. C. Hayne, P. S. North, J. W. and Bolling Sibley, all of Augusta, Ga.; purchased 6000 acres in Jefferson and Blount counties.

Ala., Birmingham.—Warrior Coal & Fuel Co., W. H. Woodward, president, will, it is reported, make improvements.

Ala., Jasper.—Douglas Branch Coal Co., C. C. Huckabee, president, will develop 2600 acres of coal land; present daily output 150 tons of coal; has equipment and development for 500 tons; no further machinery needed.

Ky., Emanuel.—Tunnel Jellico Coal Co. will develop 758 acres; daily output 10 cars; cost of machinery (supplied) \$25,000; Jesse Turner, Emanuel, president; J. D. Turner, Emanuel, vice-president and secretary; W. C. Black, Barbourville, Ky., treasurer and manager, main office, Barbourville, Ky.

Ky., Pineville.—Cheneau Lignite Coal Co. incorporated with \$30,000 capital stock by Wilbur H. Hollingsworth, T. Cairns, F. G. Burnett and others.

Md., Barton.—Boston capitalists have purchased and will develop coal mines; Lewis E. Harris is superintendent.

Mo., Novinger.—Arctic Coal & Mining Co. incorporated with \$3000 capital stock by John A. Appleby, John L. Hoodock and Sim Lilley.

Okla., Blocker.—Oklahoma Land & Coal Co. incorporated with \$10,000 capital stock by M. B. Reynolds of Blocker, W. J. Smith and R. P. Haberling of Memphis, Tenn.

Tenn., Crossville.—Cumberland Coal & Realty Co. incorporated with \$10,000 capital stock by W. Cooper, A. R. Phillips, C. E. Weyes, S. G. Phillips and J. W. Cooper.

Tenn., Knoxville.—Miller Coal Co. incorporated with \$3000 capital stock by Howard M. Miller, E. H. Stegall, C. H. Smith, W. J. Donaldson and R. S. Young.

Tenn., Memphis.—Caradine & Turner Coal Co. incorporated with \$12,000 capital stock by John A. Caradine, R. E. Caradine, R. D. Turner and others.

Va., Tazewell.—Jewell Ridge Coal Corporation incorporated with \$200,000 capital stock by Thomas M. Righter of Mt. Carmel, Pa.; George W. St. Clair of Tazewell, Va., and W. A. Scott of North Tazewell, Va.; George W. St. Clair is secretary-treasurer.

W. Va., Elverton.—Elverton Fuel Co. incorporated with \$25,000 capital stock by H. A. Moseley of Elverton; James R. Healy, Robert P. Bramley, Harry Stanton and Anna Marlon, all of New York.

W. Va., Logan.—Del Carbo Coal & Coke Co. incorporated with \$100,000 capital stock by Jacob Sherman, J. E. Sherman, W. H. Bailey, J. K. Kentry and C. Gentry.

W. Va., Moundsville.—Grave Creek Coal & Coke Co. incorporated with \$500,000 capital stock by Jasper Cope, William C. Black, D. M. Higginbotham, William Jones and Joseph Kerr, all of Uniontown, Pa.; owns 5000 acres of coal land in Marshall county; will not develop at present.

W. Va., Moundsville.—James Kennen, Morgantown, W. Va., purchased 178 acres of coal land on Fork Ridge for \$8500.

COTTON COMPRESSES AND GINS

Ark., McCrory.—Jernigan Mercantile & Gin Co. incorporated with \$10,000 capital stock by H. W. Jernigan, L. L. Cole and J. R. McCormons; will establish cotton gin 10 miles from McCrory.

Fla., Bland, R. F. D. from Alachua.—J. L. Matthews will rebuild warehouse and cotton gins reported burned.

Fla., Rochelle.—Roberts & Zetrouer will establish cotton gin.

Miss., Newhebron.—Farmers' Warehouse & Gin Co., D. D. Berry, president, is having plans prepared for rebuilding gin recently reported burned; 24x70x22 feet; two stories; ordinary construction; daily capacity 30 bales.

S. C., Guess, P. O. Ruby.—Moore & Gregory Gin Co. incorporated with \$2000 capital stock by T. W. Gregory of Guess and B. C. Moore of Chesterfield, S. C.

Tex., De Leon.—De Leon Compress Co. incorporated with \$20,000 capital stock by H. F. Underwood, William B. Starr and C. L. Tarver.

Tex., Brashear.—F. M. Holder is ready to receive bids on rebuilding gin plant recently noted burned; 20x71 feet, 20x50 feet and 12x14 feet; install machinery to cost \$5000.

Tex., Mountain Peak, R. F. D. from Midlothian.—Bellew Gin Co., recently reported incorporated with \$10,000 capital stock, awarded contract to George McAlroy (address care of company) for erection of plant; cost \$9000; plans by W. T. Sonder, Midlothian.

COTTONSEED-OIL MILLS

Tex., El Paso.—Morris & Co., Chicago, Ill., applied for franchise to establish cottonseed-oil mill, etc. (See "Canning and Packing Plants.")

DRAINAGE AND IRRIGATION

Ark., Helena.—Drainage district of which Lee Pendergrass is president plans drainage of 50,000 acres; Winters & Dove, Fort Smith, Ark., are civil engineers.

La., Gueydan.—Clarke E. Phillips, Opera-House Block, Eau Claire, Wis., purchased 80,000 acres marsh land; will develop by reclamation; plans being formulated.

La., New Iberia.—New Iberia Southern Drainage Board awarded contract to A. G.

Thomas, New Orleans, La., at \$5900 for completion of city's navigable and drainage canal to Gulf of Mexico from basin in Pascual pasture within city limits; canal is completed to within two miles of basin; when completed canal will be 10 miles long, 30 feet wide at bottom, 40 feet at top and 6 feet deep; besides providing waterway to Gulf from New Iberia, canal will also drain and reclaim many thousand acres of land; dredge now owned by city will be used.

La., Thornwell.—Thornwell Drainage District has voted issuance of \$30,000 of bonds for construction of drainage canal to reclaim 15,000 acres. Address County Commissioners, Lake Charles, La.

Miss., Clarksdale.—R. B. Lawler and F. J. Mullens will construct drainage canal, 20 feet wide, 12 feet deep and 6 miles long.

Okla., Altus.—Alfalfa Irrigation Co. (recently reported incorporated with \$5000 capital stock by Harley J. Hooker and others) contemplates irrigating 2000 acres of land by system of pumps; company works in connection with Hooker-Wishart Investment Co., 10 South 18th St., St. Louis, Mo., dealer in alfalfa lands.

Tex., Kerrville.—August Sattler purchased 12 acres of land and will construct overhead irrigation system.

ELECTRIC LIGHT AND POWER

Ala., Albertville.—Sand Mountain Electric Co. will install new machinery.

Ala., Montgomery.—Montgomery Traction Co. will, it is reported, erect power-house.

Ga., Gainesville.—Blue Ridge Power Co. incorporated with \$50,000 capital stock by William A. Carlisle and others; to build water-power-electrical plant on Chattahoochee River.

Md., Baltimore.—Pennsylvania Railroad awarded contract to Irwin & Leighton (not Irwin Leighton Company), Franklin Bldg., Philadelphia, Pa., for erecting Orangeville power plant lately mentioned; same firm has contracts for master mechanic's office, lavatory and locker building, machine and smith shop, inspector's house, inspection pits, ash pits and oilhouse; buildings are of brick, steel and concrete, and will cost about \$100,000; architect, Wm. H. Cookman, Philadelphia.

Md., Sykesville.—Springfield Hospital for Insane, Dr. J. Clement Clark, superintendent, selected Henry Adams, 855-859 Calvert Bldg., Baltimore, Md., to prepare plans for central power-house and heating plant; estimated cost, \$75,000.

N. C., Greensboro.—Dixie Concrete Co., Greenville, S. C., recently named as contractor for Greensboro steam-power plant of Southern Power Co. of Charlotte, N. C., states plant's capacity will be 12,500 horsepower; steam turbines will be installed; machinery contracts awarded; reported plant will cost \$250,000. (Previously mentioned.)

N. C., Kendall Ferry (not a postoffice).—A. H. Richardson of Ansonville, N. C., is reported as to construct water-power-electrical plant costing \$400,000; develop 6000 to 7000 horse-power for transmission by electricity; dam across river where 200 feet wide, and will extend 300 feet beyond river bank, with abutments and core wall, with earth dam 300 feet long. (Previously noted proposed.)

N. C., Marshall.—North Carolina Electrical Power Co., W. T. Weaver, president, Asheville, N. C., is progressing with construction of dam and power-house; cost \$400,000; will install machinery for developing 5000 horse-power; electricity will be delivered to distributing station at Craggy and from thence (at a voltage of 66,000) to Marshall, Waynesville, Canton, Asheville, Biltmore, Hendersonville and Black Mountain. (Previously mentioned.)

N. C., Spring Hope.—D. L. Culpepper is interested in plan to form company for development of power and erection of cotton mill on Tar River, six miles distant; 1000 horse-power estimated.

Okla., Woodward.—City voted \$30,000 bond issue for electric-light plant. Address The Mayor. (Recently mentioned.)

S. C., Wallhalla.—City will install water-wheel, generator, etc.; Geo. L. Wilson, Mayor. (See "Machinery Wanted.")

Tex., Floresville.—L. G. Wilder, secretary of Business Men's Club, is corresponding with party who is considering construction of electric-light plant.

Tex., Houston.—William M. Rice Institute,

Edgar Odell Lovett, president, Scanlan Bldg., awarded contract to William Miller & Sons Company, Pittsburg, Pa., at \$182,430, to erect mechanical laboratory and power-house; 200 feet long; two stories; brick and Ozark marble. (Recently mentioned.)

Tex., San Marcos.—San Marcos Utilities Co., W. G. Barber, president, 119 Guadalupe St. (recently noted to have secured 20-year franchise), will improve and extend distributing system of electric-light and power plant; also overhaul engine.

Tex., Waco.—P. A. Gorman, Street Commissioner, is corresponding with parties who propose constructing electric-light plant.

Va., Highland Park, P. O. Richmond.—City invites proposals for franchise to construct electric-light system until 8.30 P. M. October 3; E. M. McClure, Mayor.

Va., Williamsburg.—William and Mary College will have plans prepared by Architect Wiley of Lynchburg, Va., for light and water systems to cost about \$25,000.

W. Va., Summersville.—W. H. Campbell has applied to Nicholas County Court for 20-year franchise to construct system furnishing city with electric light and power.

FERTILIZER FACTORIES

Ala., Montgomery.—F. S. Royster Guano Co., Norfolk, Va., awarded contract at \$14,000 for construction of plant recently noted; to be A-frame or Bate shed type; 181 feet 7 inches by 252 feet; frame, covered with three-ply rubberoid; daily capacity, 450 to 500 tons fertilizer.

Ga., Americus.—Empire State Guano Co., Frank Lanier, president (recently noted to erect factory and warehouse), has placed order for machinery with Hancock-Holmes Foundry Co., Atlanta, Ga.; building will be 116x225 feet; construction by company.

Ga., Newnan.—Manget-Brannon Company will erect grain warehouse and establish fertilizer factory.

Md., Baltimore.—Plant & Land Food Co., A. B. Pickett, president, 407 East Saratoga St., is receiving bids for erection of building recently noted; 32x72 feet; two stories; brick; slag roof; cost \$5000; plans for machinery buildings not yet made.

N. C., Salisbury.—Rowan Chemical Co. organized with \$100,000 capital stock; H. P. Brown, president and manager; E. B. Neave, secretary-treasurer.

S. C., Lamar.—Lamar Fertilizer Co., recently incorporated with \$100,000 capital stock, awarded contract for erection of 50x100-foot building; ordinary construction; machinery order placed; daily capacity, 75 tons of fertilizer; John McSweeney, president; L. J. Deasley, vice-president; E. B. Boykin, secretary-treasurer.

FLOUR, FEED AND MEAL MILLS

Ark., Ashdown.—Ashdown Flour Mill & Elevator Co., recently noted as being organized with \$10,000 capital stock, will establish flour mill; plans for building not completed; will install machinery; W. D. Waldrup, manager. (See "Machinery Wanted.")

Ark., Higden.—Higden Milling Co. incorporated with \$40,000 capital stock; H. J. Hall, president; W. H. Witt, vice-president; J. W. Hardy, secretary; G. W. Davis, manager; C. D. Lester, treasurer; will establish 50-barrel-capacity flour mill.

Ky., Louisville.—Big Sandy Milling Co., John G. Burns, secretary, recently noted to have increased capital stock, will install 5 or 10-ton ice plant; erect concrete-block building. (See "Machinery Wanted.")

Ky., Paducah.—Mr. Davis of Rockport, Ind., and Herbert Hawkins of Paducah are interested in establishment of mill; erect frame and sheet-iron building; daily capacity 200 barrels of flour; cost, including machinery, \$50,000.

Tex., Orange.—Welgard, Latting & Tompkins organized to establish feed and food mill; equipment purchased.

FOUNDRY AND MACHINE PLANTS

Ark., Stuttgart.—Pumps, etc.—United Well Works incorporated with \$50,000 capital stock to manufacture screen, centrifugal irrigation pumps, etc.; acquired Stuttgart Machine Works, which new company will combine with J. L. Tindall Machine Co. and Sichel & Pennington; new machinery will be purchased, including bending roll, capacity 1/4-inch steel plates 16 inches wide; power punch to punch 1/4-inch holes in plate; pipe machines for cutting and threading pipe in sizes from 3 to 16 inches, and cold cut-off saw; all machines to be direct connected with 220 D. C. belt motors; Ray O. Burks, president; J. L. Tindall, vice-president; H.

B. Allen Sichel, secretary; J. I. Porter, treasurer.

Md., Baltimore.—Can Machinery, etc.—Slaysman & Co. have purchased property at 801 East Pratt St. and will establish plant to manufacture automatic canmaking machinery, power presses and other engineering specialties; will also handle full line of engineering supplies, gas and gasoline engines and gas-producer plants.

N. C., Winston-Salem.—Machine Shop.—R. J. Reynolds Tobacco Co. awarded contract to Fogle Bros. Co. of Winston-Salem to erect machine shop; building will be one-story, brick, 45x125 feet.

Tex., Dallas.—Iron.—T. P. Fay of Jones Iron Co., St. Louis, Mo., is considering establishment of iron foundry.

GAS AND OIL DEVELOPMENTS

Ark., Ashdown.—W. H. Boone and E. W. Lydick will not develop oil property, as recently stated.

Ark., Texarkana.—National Oil & Gas Co., H. F. Offenhausser, president (recently reported incorporated with \$50,000 capital stock), will be ready to drill wells in few months; if necessary, will drill 2000 feet; company owns 60 acres, and in addition will develop 1000 acres of leased land.

Tex., Houston.—Mackie Dee Oil & Development Co. incorporated with \$7500 capital stock by K. H. Kawthon, W. N. Mayfield, Jr., J. D. Carroll and others.

Tex., Hempstead.—Waller County Oil Co. incorporated with \$8000 capital stock by A. G. Lipscomb, J. C. Hunter and M. S. Robinson.

Tex., Sour Lake.—Crosbie Oil Co. incorporated with \$32,000 capital stock by P. Burch, F. H. Carpenter and C. B. Anderson.

W. Va., Cairo.—Douglas Oil Co. incorporated with \$50,000 capital stock by A. M. Douglas, F. J. Adams, W. B. Howell and others.

W. Va., Huntington.—Midland Oil Co. incorporated with \$5000 capital stock by Don C. Russell, Paul W. Scott and others of Huntington and C. H. Crane of Cincinnati, O.

W. Va., Parkersburg.—Welcome Oil Co. incorporated with \$16,000 capital stock by J. E. Honke, S. F. Crane, L. A. Rolston and others.

ICE AND COLD-STORAGE PLANTS

Fla., Jacksonville.—J. W. Brown, manager of Sprague Mercantile Co., is promoting organization of company with \$200,000 capital stock to establish chain of cold-storage plants in Florida.

Fla., Tampa.—Florida Brewing Co. purchased and will install 50-ton ice-making plant.

Miss., Hibernia.—B. J. Burroughs and J. B. Messner will establish cold-storage plant.

Mo., Dexter.—Wm. Miller & Co. purchased and will install three-ton refrigerating machine.

Mo., St. Joseph.—Mueller-Keller Candy Co. purchased and will install 25-ton refrigerating plant.

Mo., St. Louis.—Jacob Maurer Meat & Provision Co. awarded contract to John Hague, St. Louis, for erection of five-ton refrigerating plant.

Mo., St. Louis.—Polar Wave Ice & Fuel Co. will erect cold-storage plant; one and a half stories; cost \$20,000.

N. C., Graham.—Home Ice & Fuel Co. incorporated with \$25,000 capital stock.

Okla., Maysville.—J. O. Allstott proposes establishment of 7000 cold-storage plant.

Tex., Fort Worth.—E. P. Maddox and H. L. Calhoun will organize Crystal Ice & Fuel Co.; to establish ice plant; daily capacity, 60 tons; cost \$60,000; machinery purchased.

Tex., Floresville.—J. C. Houston will establish 15-ton ice plant.

Tex., San Antonio.—John H. Davis and T. A. Austin are organizing company with \$60,000 capital stock to establish ice and cold-storage plant.

Tex., San Antonio.—Company is being organized with \$40,000 capital stock by John H. Davis and T. A. Austin to establish ice and cold-storage plant.

Tex., Yoakum.—R. G. Jersig will establish cold-storage plant.

W. Va., Morgantown.—Morgantown Ice Co. will enlarge plant and increase daily capacity from 25 to 50 tons.

IRON AND STEEL PLANTS

Ala., Gadsden.—Rolling Mill.—Southern Iron & Steel Co., W. H. Haasinger, president, Birmingham, Ala., completed proposed purchase of Weller Rolling Mill & Forge Co.'s plant;

will operate within 30 days as Gadsden Rolling Mill; improvements will be made, including installation of two additional boilers and other machinery; plant will roll steel bars from one-half inch to three inches in size.

LAND DEVELOPMENTS

Ala., Birmingham.—Winston Heights Land Co. incorporated with \$2100 capital stock; William T. Poe, president; E. F. Enslen, secretary-treasurer.

Ala., Birmingham.—Lookout Land Co. incorporated with \$45,000 capital stock by Gus A. Pope, Jr., T. N. Walter and G. M. S. Houston.

Ala., Birmingham.—Lookout Land Co., recently reported incorporated with \$3000 capital stock, is one of several associated companies now developing top of Red Mountain; work consists in paving, plans for residences, etc.; Gus A. Pope, Jr., is president.

Ala., Montgomery.—Boguehomme Realty Co. incorporated with \$2000; W. J. Fuller, president; R. L. Reynolds, treasurer.

Ark., Hickory Ridge.—Duffield Development Co. incorporated with \$25,000 capital stock by R. S. Duffield, F. E. Myers, W. B. Hiteshaw and others.

Fla., Pensacola.—Pensacola Development Co. incorporated with \$60,000 capital stock; W. A. Blount, Jr., president; T. E. Bird, vice-president and general manager; A. T. Barkdull, treasurer; J. Whiting Hyer, secretary.

Ga., Savannah.—Savanne Land Co. incorporated with \$10,000 capital stock by A. J. Coakley, P. A. Jorgensen and Carl Mendel.

Md., Baltimore.—Baltimore Orchard Co. incorporated with \$50,000 capital stock by James W. Richardson, 3027 West North Ave., and others.

Md., Baltimore.—Canton Realty & Construction Co. incorporated by Earle A. Kraft, 231 Courtland St., and others.

Mo., St. Louis.—Tallahassee Realty Co. incorporated with \$50,000 capital stock by X. P. Willey, William B. Sexton and William T. Nardin.

N. C., Southern Pines.—Sunnyside Land Co. incorporated with \$3000 capital stock by W. H. Adamson, A. H. Kerr and H. E. Coover.

Okla., Oklahoma City.—Rockwood Improvement Co. incorporated with \$10,000 capital stock by A. Baxter Miller, Henry Scales and Heber Hunter.

Okla., P. O. Oklahoma City.—Hawk Realty Co. (recently reported incorporated with \$200,000 capital stock) will develop industrial and residential section for industrial employees; S. C. Hawk, president; J. W. Hocker, vice-president; H. A. Hawk, secretary; Fred J. Hawk, treasurer.

Tenn., Knoxville.—Everglade Development Co. incorporated with \$10,000 capital stock by J. M. Cassell, John M. Thornburgh, Jas. C. McLaughlin, Robert S. Allison and Chas. R. O'Connor.

Tex., Pioneer.—Pioneer Townsite Co. incorporated with \$10,000 capital stock by C. H. Sharman, W. E. Spencer, J. W. Nichols and others.

Tex., San Benito.—William H. Morrison, New York, and E. H. Smith, San Benito, will develop 1000 acres of land; portion as summer and winter resort and portion for farming section; contemplate erection of general store and hotel; will also devote 50 acres of land to parks, etc. (Recently noted.)

Va., Front Royal.—Old Virginia Orchard Co. incorporated with \$10,000 capital stock; J. B. Harnsberger, president; Marvin A. Trout, secretary-treasurer.

Va., Petersburg.—Colonial Heights Corporation incorporated with \$10,000; J. E. Cuthbert, president; Robert Cabaniss, vice-president; S. H. Turner, secretary-treasurer.

LUMBER MANUFACTURING

Ala., Gurley.—Alabama Red Cedar Co. incorporated with \$10,000 capital stock by David A. Grayson, W. Hardenburg and Mrs. C. A. Bennett.

Ala., Mobile.—Industrial Lumber Co. incorporated with \$8000 capital stock by J. B. Perry, M. W. Dunlap and Ingersoll Moffatt.

Ark., Murfreesboro.—J. L. Lockaby will erect planing mill.

Fla., Clayroy, P. O. De Funiak Springs.—Clayroy Manufacturing Co. incorporated; is having plans prepared for sawmill to have capacity of 30,000 feet of lumber daily; also having surveys made for construction of logging road about 10 miles long.

Ga., Augusta.—Woodward Manufacturing Co. incorporated with \$15,000 capital stock; will erect 48x168-foot shop and 28x28-foot office building; construction by owner; cost

\$4000; machinery order placed; L. W. Woodward, president; F. P. Branch, vice-president; E. H. Mobley, secretary-treasurer.

Ky., Louisville.—Tennessee River Lumber Co. incorporated with \$50,000 capital stock; will operate sawmill; daily capacity 30,000 feet of lumber; no further equipment needed; J. T. Morgan, president; O. H. Margrave, vice-president; J. A. Morgan, secretary.

La., Elton.—Dry Prong Lumber Co., I. J. Rhinehart, president, will rebuild sawmill reported burned at loss of \$40,000.

La., Bordelonville.—L. G. Nichols, Flournoy, La., purchased 1800 acres of timber land for development; purchase price said to be \$12,000; reported that Mr. Nichols will remove sawmill from Flournoy to Bordelonville, to cut 85,000 shingles and 15,000 feet of lumber daily.

La., Gilsland.—Dalton Lumber & Tie Co. organized with \$500,000 capital stock; J. L. Dalton, president; Drew Davis, vice-president; J. E. Reynolds, secretary-treasurer.

Mo., St. Louis.—H. F. Reis Lumber Co. incorporated with \$20,000 capital stock by H. F. Reis, Thomas F. Ferry and Joseph A. Herr.

North Carolina.—Adams Bros., Charlotte, N. C., will, it is reported, develop 15,000 acres of timber land in Western North Carolina.

N. C., Scotland Neck.—Bowers-White Lumber Co. purchased, it is reported, timber land on Roanoke River for development.

N. C., Vaughan.—Vaughan Planing Mill Co. incorporated with \$10,000 capital stock by J. M. Brennehan, P. B. Skumberg and others.

Okla., Heavener.—Judd Lumber Co. incorporated with \$5000 capital stock by W. C. Judd of Heavener, S. K. Ingham of Oklahoma City, Okla.; W. T. Ingham and F. J. Buschow of Kansas City, Mo.; Case Buschow of Page, Okla.

S. C., Sumter.—Forester Lumber Co. incorporated with \$10,000 capital stock; H. N. Forester, president; C. D. McKnight, secretary-treasurer.

Tenn., Bristol.—Whiting Manufacturing Co., Philadelphia, Pa., and Asheville, N. C., purchased 600 to 700 additional acres of timber land for development.

Tenn., Lebanon.—Gulf Red Cedar Co. will rebuild lumber plant recently reported burned.

Tex., Call.—Kirby Lumber Co., Houston, Tex., will rebuild plant recently burned; company will erect; machinery purchased.

Tex., Camden.—W. T. Carter & Bro. will rebuild burned sawmill; new mill probably of steel construction.

Va., Covington.—E. M. Nettleton contemplates installation of electric generator in planing mill to supply power for lighting mill and residence.

Va., Norfolk.—Seaboard Timber Co. incorporated with \$50,000 capital stock; E. B. Freeman, president; S. M. Simpson, vice-president; L. R. Freeman, secretary; S. M. Lloyd, treasurer.

Va., Richmond.—Smith-Woodall-Gruner Lumber Co. incorporated with \$50,000 capital stock; E. F. Woodall, president; A. W. Smith, vice-president; L. F. Gruner, secretary. (Recent report slightly incorrect.)

METAL-WORKING PLANTS

Ky., Louisville.—Brass Goods.—Hauser Manufacturing Co., 644 East Jefferson St. (recently reported organized by R. M. Hauser and others), awarded contract to Geo. Stillings (address, care of company) for remodeling building; ordinary construction; will install brass and iron making machinery to cost \$2500.

Va., North Emporia.—Tin and Slate Roofing, etc.—Emporia Cornice & Skylight Works, H. T. Klugel, proprietor, awarded contract to R. E. Wright, Emporia, Va., for erection of building recently noted; 100x30 feet; 14 feet pitch; semi-fireproof construction; brick; cost \$4000; machinery mainly purchased; will manufacture skylights, cornices, cresting, tin and slate roofing, etc.; later contemplates manufacture of patented sanitary garbage can. (See "Machinery Wanted.")

MINING

Ala., Birmingham.—Iron, etc.—B. & M. Mining Co. incorporated with \$5000 capital stock by R. N. McDonough, J. C. Bass and J. H. McDonough; to mine iron, etc.

Ky., Russell and Cumberland Counties.—Lead and Zinc.—E. J. Reidy of Bradford, Pa., representative, leased several thousand acres of land in Cumberland and Russell counties; will develop lead and zinc deposits.

Mo., Duenweg.—Loy Bros. (not incorporated) will develop 65 acres coal land; daily output 10 tons of coal; cost of machinery \$10,000.

Mo., Joplin—Zinc.—Zinc Mining & Manufacturing Co. incorporated with \$300,000 capital stock by C. W. Tuerer, V. J. Adams, Charles Kennedy and others.

Mo., Webb City—Lead and Zinc.—Texmo Mining Co. incorporated with \$64,000 capital stock by L. D. Templeton, John T. Graham and others.

Mo., Webb City—Zinc.—Providence Mining & Milling Co., Charles T. Orr, general manager, awarded contract for construction of plant on zinc field lease (40 acres) to be known as Providence No. 2; fireproof construction; corrugated iron; will install 18-inch crushers with 42-inch rolls; estimated capacity 500 tons; will convert Yale mill into tailing and sludge plant.

Mo., Webb City—Lead and Zinc.—Texas Mining Co. incorporated with \$64,000 capital stock by L. D. Templeton, John T. Graham and C. L. Glass.

N. C., Lincolnton—Tin.—Piedmont Tin Mining Co. awarded contract for construction of tin smelter; daily capacity, six tons.

N. C., Siloam—Lime.—Yadkin Valley Lime & Stone Co., Winston-Salem, N. C., will develop 100 acres of lime and stone deposits; daily capacity, 100 tons lime and 600 tons crushed stone; not yet organized.

Okla., Hugo.—Kiamichi Mining & Prospecting Co. incorporated with \$20,000 capital stock by Carl H. Keesee, Warren G. Reynolds, John W. Nelson and others.

Tenn., Giles County—Phosphate.—Virginia-Carolina Chemical Co., Richmond, Va., purchased 232 acres of phosphate land for \$25,000, estimated to contain 500,000 tons of phosphate.

Tenn., Knoxville—Marble.—Appalachian Marble Co. (recently noted to have purchased equipment of Tennessee Marble Co. at Concord, Tenn.) will develop marble properties, and later contemplate manufacturing rough marble into finished product; Sam F. Kries, president; John A. Kries, vice-president; Thos. J. Dean, secretary-treasurer.

Tex., Alpine—Phosphate Rock.—J. J. Slaymaker of Beaumont, representative, leased tract of land containing phosphate rock deposits; will develop.

MISCELLANEOUS CONSTRUCTION

Ala., Mobile—Dredging.—Atlantic, Gulf & Pacific Company of New York is lowest bidder for dredging 27-foot channel for Mobile; contract price, 8.40 cents per cubic yard for dredging in river and 5.90 cents per cubic yard for dredging in bay, aggregating about \$250,000.

Ala., Mobile.—Government will expend \$500,000 for construction of lock No. 17 in Warrior River; contract work consists of rock excavation, 48,000 cubic yards of concrete masonry, building locktender's house and placing all machinery; contract recently awarded to B. H. Hardaway, Columbus, Ga.; Maj. H. Jervey, Mobile, United States Corp of Engineers, and George K. Little, Assistant United States Engineer, Tuscaloosa, Ala., will place contracts for lock machinery.

Ala., Mobile.—Louisville & Nashville Railroad, W. H. Courtenay, chief engineer, Louisville, Ky., awarded contract to Home Dredging Co., Mobile, to dredge river in front of Mobile Coal Co.'s docks to channel line; depth 23 feet; cost about \$30,000.

Fla., Jacksonville—Dredging.—Government will dredge entrance to Anclote River in Section A, channel from Clearwater Harbor to Tampa Bay and Caloosahatchee River and entrance; Section A of Anclote River is about 500 feet long, and dredging will be done to width of about 100 feet and depth of 6 feet at mean low water, removing about 40,000 cubic yards of material; dredging in channel from Clearwater Harbor through Boca Ceiga Bay to Tampa will be done from Section A to Section N, and it is estimated that 201,550 cubic yards of material will be removed; total estimated quantity of material to be dredged from Caloosahatchee River and entrance is estimated at 355,000 cubic yards place measurement, as much of which will be removed as can be accomplished with funds available, about \$45,000; bids for work in Anclote River and Clearwater Harbor will be received until October 10, and in Caloosahatchee River on October 20; Capt. George R. Spalding is U. S. engineer in charge.

Fla., Jacksonville—Dredging.—Home Dredging Co., Mobile, Ala., is lowest bidder for dredging work in St. Andrew's Bay harbor in connection with Apalachicola River improvements; \$72,000 appropriated by Congress.

Fla., Tampa—Dredging.—U. S. Engineering Department awarded contract to Hillsboro

Dredging Co., W. H. Caldwell, general manager, Tampa, at about \$900 to dredge channel to depth of 20 feet at mean low tide from Southern Steamship Co.'s docks to Seaboard Air Line Railway's lift bridge.

Md., Baltimore—Dredging.—Sanford & Brooks Company, Commerce and Water Sts., Baltimore, is lowest bidder at 2 1/2 cents per cubic yard for removal of about 100,000 cubic yards of material from ship channels in Curtis Bay and Spring Gardens; work in Curtis Bay is for removal of 90,000 cubic yards and Spring Gardens about 10,000 cubic yards; Thomas L. Casey, Colonel, Engineers, U. S. Engineer Office, Room 203 Custom-house, Baltimore.

Miss., Biloxi—Breakwater.—C. A. Thompson of Biloxi has contract to construct breakwater in front of W. M. Lampton's property on West Beach; breakwater will be about 100 feet long; crescented wood; estimated cost \$4 per linear foot.

S. C., Charleston—Pier.—Charleston Terminal Co. secured permit to erect pier on site of South Atlantic Wharf; estimated cost \$10,000.

Va., Norfolk—Dredging.—Atlantic, Gulf & Pacific Company of New York is lowest bidder at 11.47 cents per cubic yard for dredging southern branch of Elizabeth River; \$90,000 available; Mason M. Patrick, Lieutenant-Colonel, Engineers, Engineer Office, U. S. Army, Room 2 Custom-house, Norfolk.

Va., Norfolk—Dredging.—Morris & Cummings Dredging Co. of New York is lowest bidder at 9 1/4 cents per cubic yard for dredging through Middle Ground, off Newport News, which contemplates channel to Newport News 35 feet deep at mean low water; \$115,000 appropriated; Mason M. Patrick, Lieutenant-Colonel, Engineers, Engineer Office, U. S. Army, Room 2 Custom-house, Norfolk.

Va., Norfolk—Dredging.—Maryland Dredging & Contracting Co., 803-805 Fidelity Bldg., Baltimore, Md., is lowest bidder at 13 1/2 cents per cubic yard for dredging 35-foot channel through Thimble Shoals; Mason M. Patrick, Lieutenant-Colonel, Engineers, Engineer Office, U. S. Army, Room 2 Custom-house.

MISCELLANEOUS ENTERPRISES

Ala., Florence—Heaters.—E. J. Parker, general manager International Hygienic Heater Co., states company is having hygienic heater manufactured by contract in Louisville, Ky.; not planning erection of plant this year; will probably locate in Florence. (Recently noted under "Miscellaneous Factories" at St. Louis, Mo.)

Ala., Greenville—Hardware and Implements.—Johnson Hardware & Implement Co. incorporated with \$14,800 capital stock by J. F. Johnson, J. H. McCann, D. M. Zeigler and others.

Ark., Helena—Laundry.—R. E. Martin of Truman, Ark., is president of company incorporated with \$10,000 capital stock to establish laundry.

Ark., Hot Springs—Baths.—Maurice Bath Co. incorporated with \$100,000 capital stock by Wm. G. Maurice, M. J. Henderson, L. E. Sawyer and others.

Fla., Brooksville—Publishing.—Star Enterprise incorporated with \$5000 capital stock; J. C. Burwell, president and treasurer; R. N. Chelf, vice-president; C. M. Price, secretary.

Fla., Jacksonville—Crematory.—City contemplates erecting \$40,000 crematory. Address The Mayor.

Ga., Atlanta—Farms.—Hastings Farm Co. incorporated with \$500,000 capital stock by H. W. Brown and others.

Ky., Bowling Green—Electrical Equipment, Isbell-Chapman Electrical Co. incorporated with \$5000 capital stock by Wm. H. Isbell, W. W. Chapman and G. L. Mercer.

Ky., Lexington.—McClure Gum Co. incorporated with \$20,000 capital stock by J. G. Willis, L. P. Gum and Virgil McClure.

Ky., Paducah—Plumbing, etc.—M. M. Coulson Company incorporated with \$15,000 capital stock by M. M. Coulson, John Street and others.

La., Baton Rouge—Grain Elevator.—Baton Rouge Mill & Elevator Co., A. R. Barracks, president, will erect corn mill and elevator on property costing \$2500. (Amount recently incorrectly noted as representing cost of buildings.)

Md., Baltimore—Construction.—Martin A. Schaefer Construction Co. incorporated with \$2000 capital stock by Martin Schaefer, 3427 Foster Ave.; John Schaefer, 3501 Foster Ave., and others.

Md., Baltimore—Printing Plant.—Frank A. Munsey, the Baltimore News, Calvert and Fayette Sts., will open bids September 26 for

remainder of Munsey building; construction to begin at completion of four stories now under construction; entire structure to be 15 stories. Contractors estimating are Geo. A. Fuller Company, Fuller Bldg.; Thompson-Sherrett Company, 51 Wall St.; Norcross Bros. & Co., 100 Fifth Ave.; Hedden Construction Co.; Wells Bros. & Co., all of New York; plans by McKim, Mead & White, 100 Fifth Ave., New York. (Previously described.)

Md., Havre de Grace—Garage.—Havre de Grace Automobile Co. will erect garage on Union Ave.; purchased building for annex.

Miss., Hattiesburg—Fishing Lake.—Company is being organized with \$2500 capital stock by W. C. Bennett and associates to construct lake and stock same with fish.

Mo., Kansas City—Automobiles.—R. H. Collins Motor Co. incorporated with \$50,000 capital stock by R. H. Collins, D. B. McCoy and J. F. Martin.

Mo., St. Louis—Cleaning and Dyeing.—Chapman Bros. Cleaning & Dyeing Co. incorporated with \$5000 capital stock by Gilbert M. and Oliver M. Chapman and J. Leroy Moller.

Mo., St. Louis—Construction.—Duffner & Stecker Construction Co. incorporated with \$5000 capital stock by H. E. Duffner and Mary A. Stecker.

Mo., St. Louis—Builders' Supplies.—Koch Hardware & Builders' Supply Co., recently reported incorporated with \$25,000 capital stock, has plans by E. F. Nolte, 1101 Fullerton Bldg., St. Louis, for building; two stories; 30x30 feet; ordinary construction; no machinery needed; address proposals to John F. McDermott, 515 Liggett Bldg., St. Louis; H. N. Koch, president; Anthony Collier, vice-president; B. H. Dierks, secretary-treasurer.

N. C., Charlotte—Building Materials, etc.—Piedmont Concrete Co., recently noted incorporated (under "Concrete and Cement Plants") with \$50,000 capital stock, will conduct concrete business; also handle building materials and supplies, structural iron and steel and reinforcing material; will erect fireproof building; construction by company; E. E. Player, president and treasurer; A. J. Hagood, vice-president; D. H. Anderson, secretary. (See "Machinery Wanted.")

N. C., Durham—Garage.—R. H. Wright awarded contract to T. S. Christian, Durham, for erection of garage; brick; 45x65 feet; one story.

N. C., Durham—Motor Cars.—E. B. Lyon Motor Car Co. incorporated with \$50,000 capital stock by E. B. Lyon, James M. Black and J. E. Johnson.

N. C., Mt. Airy—Granite Works.—Granite Cutting Co. incorporated with \$25,000 capital stock by John Grignola and Howard R. Brown of New York and George Bailey of Mt. Airy.

N. C., Wilmington—Printing.—Register Printing Co. incorporated with \$5000 capital stock by W. R. Yop, Edward Register and others.

N. C., Wilmington—Construction.—Grossman Mahler Architectural & Construction Co. incorporated with \$125,000 capital stock; E. F. Grossman, president; C. P. B. Mahler, secretary-treasurer.

Okla., Oklahoma City—Heating and Lighting.—Home Heating & Lighting Co. incorporated with \$100,000 capital stock by E. J. Dempree, J. D. Dempree, W. T. Croslen and others.

Okla., Tulsa—Printing.—Black Printing Co. incorporated with \$12,000 capital stock by Alex. Black, C. H. Black, Frank Neerman and C. F. Neerman.

S. C., Cheraw—Automobiles.—Rouse-Pegues Automobile Co. incorporated with \$10,000 capital stock by O. M. Pegues, F. W. Pegues, both of Kollock's, S. C., and R. A. Rouse of Cheraw, S. C.

S. C., Greer—Publishing.—Greer News-Leader Co. incorporated with \$2500 capital stock; M. C. Davenport, president; J. T. Wood, first vice-president; J. Rutledge McGhee, second vice-president; M. L. Rhodes, secretary-treasurer.

S. C., Williamston—Building Materials, etc.—Builders' Lumber & Supply Co. (recently reported incorporated with \$25,000 capital stock under "Lumber Manufacturing Plants" at Anderson, S. C.) will handle building materials, paint, etc.; W. W. Griffin, president; A. G. Pinckney, vice-president; D. Brown, secretary-treasurer.

Tenn., Jackson—Paving and Engineering.—Engineering & Paving Co. incorporated with \$15,000 capital stock by Lewis Coleman, J. K. Hodges, James Finlay, Charles D. Coffey and W. L. Frierson.

Tenn., Nashville—Automobiles.—J. C. Green Automobile Co. incorporated with \$15,000 capital stock by Sam Erwin, E. B. Craig, Jr., J. C. Guild and J. A. Chambliss.

Tenn., Nashville—Publishing.—Tennessee Publishing Co. incorporated with \$60,000 capital stock by Luke Lea (president), A. M. Shook, J. O. Leak, Herman Suter, F. M. Ewing and G. T. Fitzhugh; is consolidation of Nashville Tennessean and Nashville American.

Tex., El Paso—Refuse-disposal Plant.—Sorenson & Morgan and W. E. Anderson of El Paso are lowest bidders at \$90,124 on Sections 1, 2 and 3 of city disposal plant. (Lately mentioned.)

Tex., El Paso—Refuse Disposal Plants.—City awarded contract to Sorenson & Morgan, El Paso, for sections 1 and 3 and to W. E. Anderson for section 2 for construction of sewage and garbage incinerator plants, including building for combined incinerator and pumping station; reinforced concrete; 2,000,000 and 3,000,000-gallon centrifugal pumps and one acre of filter beds, with necessary dosing tanks; Public Works Engineering Co., Beck Bldg., Portland, Ore., engineers in charge; F. H. Todd, City Engineer. (Recently noted.)

Va., Luray—Supplies.—Luray Supply Co. incorporated with \$50,000 capital stock; E. C. Harnsberger, president, Luray, Va.; S. K. Davis, vice-president and treasurer, Staunton, Va.; G. N. Kefauver, secretary, Roanoke, Va.; will open bids on or before October 10 for erection of building.

Va., Richmond—Steel Products.—Southern Steel Products Co. incorporated with \$25,000 capital stock; Joseph F. White, president; L. Eaton, vice-president and treasurer; Louis P. Scay, secretary.

Va., Richmond—Resort.—Beach Park Corporation incorporated with \$50,000 capital stock; G. E. Gubernator, president, Richmond; G. E. Perkinson, secretary-treasurer, West Point, Va.; will make improvements to Beach Park and continue operations.

Va., Richmond—Grain Elevator.—American Terminal Warehouse Corporation, W. B. West, president, 613 Mutual Bldg., awarded contract to I. J. Smith Company and W. T. Lindsey, Richmond, for erection of grain elevator; one building to be four stories and basement; 60x100 feet; cost \$30,000; one to be two stories and tower; 20x110 feet; cost \$7500; plans by Carneal & Johnston, Richmond.

MISCELLANEOUS FACTORIES

Ala., Birmingham—Mattresses.—Faultless Mattress Co. incorporated with \$300,000 capital stock by A. F. Williams, A. F. Inman and W. Y. Prince.

Ala., Birmingham—Phonograph Records.—D. T. Blakely of Nashville, Tenn., is reported as contemplating establishment of plant to manufacture phonograph records.

Ala., Lauderdale.—International Hygienic Co. incorporated with \$100,000 capital stock.

Ark., Fort Smith—Brewery.—George Schneider will establish \$200,000 brewery.

Ark., Hazen—Clover Farm Dairy Co. of Memphis, Tenn., purchased plant of Union Creamery; will enlarge and install cold storage plant.

Ark., Humphrey—Rice Mill.—E. B. Stokes, A. D. Bunn and associates are organizing company to establish rice mill.

Arkansas—Rice Mill.—Central Arkansas Rice Co. incorporated with \$150,000 capital stock; address, care of Thomas J. Barry, 4 Court St., Boston, Mass.

Ark., Texarkana—Glass.—Texas Glass Co. is arranging to begin operations November 14; following buildings under construction: Blowing room, T-shaped, 148x160 feet; flattening-house, 136x176 feet; warehouse, 100x160 feet; batchroom, 60x90 feet; box shop, 40x60 feet; all frame steel and fireproof brick construction; will erect offices and other small buildings later; whole cost, \$75,000.

Ark., Texarkana—Peanuts.—Bernhart Mercantile Co. of St. Louis, Mo., will establish branch plant and warehouse; cost of buildings and machinery, \$20,000.

Fla., Bagdad—Turpentine.—Michigan Turpentine Co. of Bay City, Mich., is reported as considering establishment of plant near Bagdad for producing turpentine by destructive distillation from Florida pine.

Fla., Jacksonville—Turpentine.—Haw Creek Turpentine Co. organized with \$50,000 capital stock; Lee B. Jones, president; J. C. Reynolds, secretary-treasurer, both of Jacksonville; W. N. Mattox, vice-president and general manager, of Espanola, Fla.

Fla., Monticello—Tobacco.—Jefferson County Sumatra Tobacco Co. awarded contract for erection of packing-house; concrete; cost \$7000 to \$8000.

Fla., Pensacola—Sauce.—Red Snapper Sauce Co., Memphis, Tenn., engaged Biggers & Chamberlain of Mobile, Ala., as architects

for plant; three stories; 85x125 feet; brick and concrete; \$15,000 warehouse, 75x100 feet; two stories; \$18,000 pepper bottling works. (Previously noted.)

La., Florenville-Turpentine.-Poitevent & Favre Lumber Co., New Orleans, La., will establish turpentine plant; awarded contract for 300,000 feet of pine lumber to be used in constructing 60 cabins and other buildings.

La., Mandeville-Creamery.-John L. Lavelle is interested in establishment of creamery.

La., New Orleans-Brewery.-Union Brewing Co. incorporated with \$150,000 capital stock; Joseph Di Carlo, president; George Mule and Philip Foto, vice-presidents.

Md., Baltimore-Corks and Seals.-Crown Cork & Seal Co., 1511 Guilford Ave., awarded contract to D. M. Andrews Company, 26th St. and Mt. Vernon Ave., Baltimore, for erection of two factory buildings at Highlandtown; three and four stories; brick; stone trimmings; reinforced concrete foundations; slate roofs; concrete floors; fireproof; 100x200 feet; steam heat; electric lights, elevators; cost \$80,000; plans by C. M. Anderson, 324 North Charles St., Baltimore. (Recently noted.)

Md., Baltimore.-Frederick Bauernschmidt, 1120 Hillen St., is having plans prepared by Frederick Wolf, Chicago, Ill., for addition to bottling and stock plant; one story and basement; brick and steel; reinforced concrete foundation; slate roof; also improve present plant and install additional equipment; cost \$20,000. (Recently noted.)

Md., Baltimore-Paper and Paper Boxes.-Reese & Reese incorporated with \$1000 capital stock by Howard H. Reese, 1812 Linden Ave.; Laurence N. Reese, 347 North Charles St., and R. Howard Bland, Calvert and German Sts.

Md., Baltimore.-Cue-tip Holders.-Cue Tip Holder & Protector Co., recently reported incorporated with \$10,000 capital stock by Chas. E. Lenz (1128 West North Ave.) and others, will have stock manufactured at present; later will install machinery.

Md., Baltimore.-Monumental Brewing Co., East Lombard and 7th Sts., contemplates erection of bottling plant on Baltimore St., between 6th and 7th Sts.; having plans prepared by Otto C. Wolf of 1025 Arch St., Philadelphia, Pa.; brick construction; one story.

Md., Hagerstown-Milk By-products.-Casein Manufacturing Co., L. R. Schwerin, general manager, Hanover Bank Bldg., Pine and Nassau Sts., New York, is understood to have completed arrangements for plant (noted in August) to handle milk and cream and manufacture paint, glue, paper size, food products, buttons, etc., from by-products of milk; estimated cost \$90,000; first appropriation \$40,000.

Md., Sykesville-Creamery.-Samuel Shipley is promoting establishment of creamery.

Miss., Brookhaven-Creamery.-Brookhaven Co-operative Creamery Association organized with \$10,000 capital stock; Estus C. Smith, president; Joseph Meyers, vice-president; William Pettis, secretary; F. F. Becker, treasurer.

Mo., Kansas City-Automobiles.-American Automobile Co. of Beatrice, Neb., will establish automobile factory; daily capacity, 10 cars.

Mo., Kansas City-Heaters.-Imperial Heater Co., recently reported incorporated with \$100,000, will install machinery to manufacture heaters; W. Z. Flannery, president; R. S. Conwell, vice-president; R. L. Wilder, secretary-treasurer. (See "Machinery Wanted.")

Mo., Kansas City-Skirts.-New Idea Skirt Co. incorporated with \$5000 capital stock by Julius Manheim, Lee Goldsmith and Ray Manheim.

Mo., Pollock-Creamery.-Pollock Creamery Co. incorporated with \$6200 capital stock by H. K. Smart, D. L. Saulsbury, Ira M. Dennis and others.

Mo., St. Louis-Skirts.-Stylefit Skirt Co. incorporated with \$5000 capital stock by Barney C. Abramsky, Nathan Schatz and Bernard Frankel.

N. C., Canton-Fiber.-Champion Fiber Co. will obtain 150 electrical horse-power from W. T. Weaver Power Co. of Asheville, N. C., and operate mills by electricity.

N. C., Walnut Cove-Tobacco Prizery.-Stokes County Union Warehouse Co., J. R. Lawson, president, has plans by and awarded contract to Geo. H. Charles, Germantown, N. C., for erection of building recently noted; 75x100 feet; brick; semi-fireproof construction; machinery mainly purchased. (See "Machinery Wanted.")

N. C., White Oak-Bakery.-J. E. Brandt purchased and will install bread oven with

daily capacity of 5000 loaves; also install cake oven.

S. C., Charleston-Window Screens.-Hid den Window Screen Co. incorporated with \$3000 capital stock by J. J. O'Donnell and T. G. Disher.

S. C., Columbia-Knife Polishers.-Rossignol Manufacturing Co. incorporated with \$5000 capital stock by P. H. Lachicotte of 1424 Main St., W. J. Murray, T. H. Melghan and Geo. H. Huggins.

Tenn., Chattanooga-Watchmakers' Supplies.-J. B. Davis, P. P. Coleman and M. A. Russell are organizing company with \$25,000 capital stock to manufacture watchmakers' goods.

Tenn., Chattanooga-Tannery.-Robert Scholze will make addition to plant; install power plant, boilers, engines, etc.; cost \$2500.

Tenn., Chattanooga-Hardware Specialties.-American Manufacturing Co., J. B. Robinson, president, will rebuild plant recently reported burned; erect 149x150-foot building and install machinery to manufacture hardware specialties. (See "Machinery Wanted.")

Tenn., Memphis-Screen Hangers.-Perfect Screen Hanger Co. increased capital stock to \$50,000.

Tex., Big Springs-Creamery.-Big Springs Creamery Co. incorporated with \$6000 capital stock by L. S. McDowell, F. L. Nidever, A. E. Pool and others.

Tex., Bonham-Creamery.-Bonham Creamery & Ice-Cream Co. incorporated with \$7000 capital stock by J. N. Hughes, T. N. Foster and Will H. Evans.

Tex., Goliad-Creamery.-K. McKinsie, W. R. Campbell, W. B. Appleby and others are interested in establishment of creamery.

Tex., Dallas-Gloves.-Cherokee Glove Co. is name of company to operate glove factory recently noted; building erected; will install 20 power and 4 foot machines; daily capacity 200 dozen pairs gloves; Frank Holmes, president; E. L. Nance, vice-president and secretary; S. A. Nance, treasurer and manager.

Tex., San Antonio-C. H. Halt awarded contract at \$22,500 to E. F. Meyers, Detroit, Mich., for erection of five factory buildings and warehouse; E. F. Miller of San Antonio, foreman of construction.

Tex., Taylor-Coffee.-Nalley Grocery Co. awarded contract at \$6500 to Lee & Evans, Taylor, for erection of coffee-roasting plant; to S. M. Goodwyn, Taylor, for cement roofing and reinforced flooring. (Recently noted.)

Tex., Texarkana-Hubbard Manufacturing Co. incorporated with \$6000 capital stock by Gus B. Grey, G. M. Hubbard, E. M. Rochelle and others.

Va., Norfolk-Ice-cream.-Norfolk-Baltimore Ice-Cream Co. incorporated with \$5000 capital stock; J. Feuerstein, president; W. H. Sterling, secretary-treasurer, both of Norfolk; J. H. Bear, vice-president and general manager, 518 East North Ave., Baltimore, Md.

Va., Richmond-Safety Device.-Miller Corporation incorporated with \$1,000,000 capital stock; W. A. Higgs, president, Charlottesville, Va.; J. N. Garber, first vice-president, Harrisonburg, Va.; Thomas H. Lion, second vice-president, Manassas, Va.; C. A. Crowell, secretary-treasurer, Staunton, Va.; will develop Miller automatic system of train control for railroads; control by electricity furnished from either central power plant or batteries at different points.

Va., Roanoke-Railway Patent Coupler Cut-off.-Birmingham Safety Cut-Off Lever Co., incorporated with \$150,000 capital stock (noted \$15,000, as recently stated), will erect \$20,000 building; ordinary brick construction; R. H. Woodrum, president, Roanoke; J. P. Birmingham, vice-president, Lexington, Va.; R. H. Willis, secretary-treasurer, Roanoke; further details not available at present.

Va., Suffolk-Suffolk Manufacturing Corporation incorporated with \$50,000 capital stock; I. B. Norfleet, president; R. J. Norfleet, vice-president; J. C. West, secretary-treasurer.

W. Va., Bluefield-Gas.-Bluefield Gas & Fuel Co. is having plans prepared by Louie N. Rancke of Baltimore Retort & Fire Brick Co., Hull and Nicholson Sts., Baltimore, Md., for plant to manufacture coal gas for illuminating and heating; 20x30 feet; 24 feet high; gas holder to contain 50,000 cubic feet; 54 feet in diameter and 22 feet 6 inches deep; daily capacity, 100,000 or more cubic feet; cost \$25,000; awarded contract to W. H. McArthur for foundation and concrete work; also contemplates supplying gas to Graham, W. Va. (Other details previously reported.)

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, SHEDS, ETC.

Ark., Baring Cross (not a postoffice).-St. Louis, Iron Mountain & Southern Railway, M. L. Byers, chief engineer maintenance of

way, St. Louis, Mo., will erect 82-stall roundhouse to cost \$100,000; will install machine shop; cost of equipment about \$35,000.

Ala., Flomaton-Louisville and Nashville Railroad, W. H. Courtenay, chief engineer, Louisville, Ky., is having plans prepared for two station sheds, each 650 feet long and 19 feet wide, and cross shed; two concrete platforms, each 650 feet and 16 feet wide, and concrete cross platform will also be built. (Recently mentioned.)

Md., Baltimore.-Pennsylvania Railroad awarded contract to Irwin & Leighton, Franklin Bldg., Philadelphia, Pa., to erect power-house, machine and smith shop, etc.; buildings of brick, steel and concrete, costing about \$100,000. (See "Electric-light and Power Plants.")

Mo., Springfield-Springfield Traction Co., W. A. Bixby, general manager, is preparing plans, it is reported, for two-story brick and concrete addition to carhouse at Division and Park Sts.; estimated cost, \$35,000; will receive bids about December 1.

Va., Roanoke-Roanoke Railway & Electric Co. will, it is reported, erect carhouse on Walnut St.

ROAD AND STREET WORK

Ala., Birmingham-City will pave Tenth Ave. south from 15th to 21st St.; Maury Nicholson, City Engineer.

Ala., Birmingham-Street committee adopted report of special committee providing for paving some of principal streets on Southside, amounting to about \$250,000; streets will include 18th, from railroad to Eleventh Ave., brick to be used from railroad to Ave. H; Ave. B and Ave. C, from 18th to 20th Sts.; Ave. F from 21st to 23d St. and from 18th to 27th Sts., and 23d St. to Highland Ave.; chief materials to be used will be brick and bitulithic; committee will also recommend that boulevard from Ensley to Wylam be completed at once at cost of \$3000, and awarded contracts amounting to about \$25,000 for street grading and sidewalk improvements on Northside; Maury Nicholson, City Engineer.

Ala., Birmingham-City will construct double brick roadway connecting Fairview with Ensley; from Fairview to Palmer Station concrete wall will be erected on each side of car tracks, and road will be graded and paved with brick on both sides of trackage, making two 18-foot roadways; estimated cost, \$57,000; bids will be received until October 5; Maury Nicholson, City Engineer. (See "Machinery Wanted.")

Ala., Wetumpka-Elmore County Commissioners will vote November 8 on \$170,000 bond issue for road improvement recently noted; H. J. Lancaster, chairman Board of County Commissioners.

Fla., Tarpon Springs-City awarded contract to Chattanooga Paving Co., Chattanooga, Tenn., for paving recently noted; material to be used, vitrified brick; cost \$45,000; C. G. Stiles, City Engineer.

Ky., Lexington-City will vote in November on issuance of \$500,000 of bonds for street improvements; John Skain, Mayor.

Ky., Paducah-City will soon invite bids on construction of concrete sidewalks, curbs and gutters on Jefferson St., from 11th to 14th St., and on 10th St. from Trimble to Burnett St.; grading and graveling 14th St. from Burnett St. to Rieke farm, and for construction of sidewalks on Flournoy St. from 12th to 14th St.; L. A. Washington, City Engineer.

La., Alexandria-City awarded contract to Galley & Clark of Alexandria at 40 cents per linear foot for construction of concrete curbing along Gould Ave., preparatory to paving; bids for paving are being invited, as lately stated; I. W. Sylvester, engineer in charge.

La., Calcasieu Parish-Public highway will be built from point in Louisiana, opposite Orange, Tex., 4.46 miles in length; bids received until October 6. Address S. R. Shepherd, secretary Commercial Club, Orange. (See "Machinery Wanted.")

Md., Denton-Town will pave sidewalks and shell Franklin St. from 1st to 8th St. Address Town Commissioners.

Mo., Illinois-City voted issuance of \$5000 street-improvement and sewer bonds. Address The Mayor.

Miss., Jackson-City Council adopted new plans and specifications for paving North State St.; J. N. McLeod, Street Commissioner. (Recently mentioned.)

Miss., Meridian-City will construct 15,000 square yards creosoted wood-block pavement on 5th St.; amount available for work, \$50,000; W. E. Whitmore, Meridian, engineer in charge; contract recently noted awarded to C. H. Dobbis Construction Co., Meridian.

N. C., Black Mountain-Black Mountain township will vote (after January) on \$100,

000 bond issue for construction of road from Black Mountain to Mt. Mitchell, recently noted; road will be 16 to 20 miles long; estimated cost per mile, \$5000; R. O. Alexander, 23 East 4th St., Charlotte, N. C., chairman of committee.

N. C., Wilmington-Louis S. Belden, chairman Commissioners of Streets, states that owing to city's decision to defer paving of streets until after sewers have been laid, proposals for paving will not be considered on October 15, as recently stated. (See "Machinery Wanted.")

Okla., Fort Sill-Bids will be received until October 15 for grading roads and constructing concrete walks in new artillery post; Capt. David L. Stone, U. S. A., Constructing Quartermaster. (See "Machinery Wanted.")

Okla., Oklahoma City-City will receive bids until October 4 for construction of street and alley crossings; also for paving, grading, etc., of 30th St. and Lee Ave.; each to be paved width of 26 feet from curb to curb; Bob Parman, City Clerk. (See "Machinery Wanted.")

S. C., Charleston-Charleston Terminal Co., W. E. Huger, president, will pave Concord St.

S. C., Conway-Horry county will vote in November on issuance of \$100,000 of bonds for road improvements. Address County Commissioners.

S. C., Greenville-City will expend \$80,000 for asphalt and asphalt macadam paving; H. S. Jaudon & C. V. Downing, engineers in charge, Greenville; contract recently noted awarded to West Construction Co., Chattanooga, Tenn.

Tenn., Jonesboro-City contemplates improving streets; Robert Dyer, engineer, Johnson City, Tenn., is surveying streets.

Tenn., Memphis-City will pave Peabody Ave. with asphalt or bitulithic; concrete foundation; bids will be received until September 30; E. H. Crump, Mayor. (See "Machinery Wanted.")

Tenn., Nashville-Board of Public Works awarded contract to Adamant Stone Co. of Nashville at 57 cents per square yard for paving Eighth Ave., between Broadway and Lea Ave., and to Foy-Proctor Company for curbing and sidewalk construction on various streets, including Public Square, Church St., Third and Fourth Aves., etc.

Tex., Ballinger-Runnels County Road District No. 1 defeated \$60,000 bond issue for road improvement recently noted; R. S. Griggs, County Judge.

Tex., Dallas-City awarded contract to Texas Bitulithic Co. of Dallas at \$2.30 per square yard for paving Swiss Ave. from Peak to Good St., and at \$2.65 per square yard for paving same street from Good to Preston St. with brick.

Tex., Dallas-City will pave Pearl St. from Live Oak to Ross Ave.; bids received until October 5; J. B. Winslett, City Secretary. (See "Machinery Wanted.")

Tex., Edna-Jackson county will issue \$100,000 of bonds for road improvements. Address County Commissioners.

Tex., Houston-City Council is considering issuance of \$100,000 of bonds for street paving; no election will be held; H. B. Rice, Mayor.

Tex., Lockhart-Precinct No. 1 of Caldwell county will vote in October on issuance of \$50,000 of bonds for road construction. Address Precinct Commissioners. (Recently mentioned.)

Tex., Orange-See La., Calcasieu Parish.

Tex., San Angelo-City will vote October 20 on issuance of \$30,000 of bonds for street paving; contemplates six blocks of vitrified brick paving. Address The Mayor.

Tex., Sherman-City contemplates paving sidewalks on Houston, Pecan, Crockett and other streets; John C. Wall, Mayor.

Tex., Stamford-City voted \$10,000 bond issue to complete paving on east side of square and on West McIlharg St. Address The Mayor.

Tex., Sinton-San Patricio county voted \$100,000 bond issue for road improvements. Address County Commissioners.

Tex., Wharton-City contemplates expenditure of \$15,000 in construction of cement curbs and gutters; G. S. Gordon, Mayor. (Recently noted to have voted \$15,000 bond issue.)

Va., Farmville-City contemplates expenditure of \$30,000 in road improvement recently noted; material to be used will be bitulithic or vitrified brick; granolithic sidewalks and cement gutters on hillsides. (See "Machinery Wanted.")

Va., Norfolk-Dulby & Nottingham, Norfolk, Va., have contract at \$15,110 for con-

struction of three miles of macadam roadway on Cottage Hill Rd. from Lafayette Ave., Lafayette Park, to Tanner's Creek crossroads. (Recently mentioned.)

Va., Richmond.—City will grade to sub-grade Hanover Ave., Sheppard to West Sts., and Sheppard St., Grove to Stuart Ave.; bids opened September 28; Charles E. Bolling, City Engineer.

Va., South Boston.—Bids will be received until October 4 at office of R. S. Barbour, chairman Road Commission, for rubble stone paving in Halifax county; P. St. J. Wilson, State Highway Commissioner, Richmond, Va. (See "Machinery Wanted.")

Va., Staunton.—Board of Aldermen adopted resolution providing for \$10,000 bond issue to repair cave-in on Baldwin and Lewis Sts. Address The Mayor. (Further facts recently mentioned.)

W. Va., Avis, P. O. Hinton.—City will pave streets; bids to be received until October 3; R. W. Ervin, Mayor. (See "Machinery Wanted.")

W. Va., Welch.—McDowell county will expend \$50,000 in proposed improvement and construction of roads; county will probably do work; W. J. McLaren, County Road Engineer.

W. Va., Princeton.—Mercer County Commissioners will consider calling election in November to vote on issuance of \$200,000 of bonds for road construction.

SEWER CONSTRUCTION

Fla., Clearwater.—City will receive bids until October 15 for construction of proposed sanitary sewerage system; 2 1/2 miles pipe; W. W. Lyon, consulting engineer, 305 Duval Bldg., Jacksonville, Fla. (Lately mentioned. This is change of date. See "Machinery Wanted.")

Ky., Georgetown.—City awarded contract to H. K. Bell, Lexington, Ky., to install 700 feet 42-inch concrete pipe at \$4.20 per linear foot; 700 feet 36-inch at \$3.50 linear foot; rock excavation, \$3.50 per cubic yard; manholes, \$3000; Alexander Potter, 114 Liberty St., New York, recently noted as consulting engineer.

Mo., Illinois.—City voted issuance of \$5000 sewer and street improvement bonds. Address The Mayor.

Okla., Enid.—City will construct eight-inch lateral sewer in sewer districts Nos. 43 and 44. Bids opened September 28; E. R. Lee, City Clerk.

Okla., Muskogee.—City will construct storm sewer in District No. 12; bids will be received until October 17; Charles Wheeler, Jr., City Clerk. (See "Machinery Wanted.")

Okla., Stigler.—City will expend \$75,000 to construct sewerage and water-works system; work consists in construction of five miles of sanitary sewer, including septic tank; recently noted awarded to Sequoyah Engineering Co., 609 Merchants' National Bank Bldg., Fort Smith, Ark.

Tenn., Knoxville.—Chas. C. Shorkley, 700 Empire Bldg., Knoxville, Park City engineer, states he is considering pumping station for Park City (suburb). (See "Machinery Wanted.")

Tex., Bastrop.—City is considering construction of sewer system. Address The Mayor.

Tex., Bastrop.—City is considering construction of sewer system. Address The Mayor.

Tex., Galveston.—F. D. Horton, Houston, Tex., is lowest bidder at \$382.70 for construction of sewer from intersection of 33d St. and Ave. P 1/2 to east end of United States military reservation; work will comprise 1497 linear feet 15-inch pipe, 3000 linear feet 12-inch pipe, 735 linear feet 8-inch pipe, 16 manholes and accessories; A. T. Dickey, City Engineer. (Recently mentioned.)

Va., Portsmouth.—City will lay following pipe in Fifth ward, for connecting flush tanks with water mains: Three-quarter-inch AA lead pipe, three-quarter-inch galvanized pipe, lead connections three feet six inches long for AA pipe, one-half-inch taps in water main; bids opened September 28; A. Aug. Bilisely, chairman sewerage committee.

W. Va., Avis, P. O. Hinton.—City will construct sewers; bids to be received until October 3; R. W. Ervin, Mayor. (See "Machinery Wanted.")

TELEPHONE SYSTEMS

Ala., Gadsden.—Hokes Bluff Telephone Co. organized with F. P. Manders, president; S. H. Sibert, secretary and treasurer; will construct telephone line from Hokes Bluff to East Gadsden, distance of three miles.

Ark., Hackett.—Hackett Telephone Co. in-

corporated with \$5000 capital stock by Will Hastings and others.

Ark., Heber.—L. E. Carmichael has purchased North Arkansas Telephone Co. system, and will improve.

La., Newellton.—Cumberland Telephone & Telegraph Co., Leland Hume, general manager, Nashville, Tenn., will establish telephone exchange.

Md., Hernwood, R. F. D. from Granite.—Hernwood Telephone Co. organized by Albert Ferrell and others to construct nine-mile telephone system between Hernwood and Pikesville, Md.

N. C., Charlotte.—Southern Bell Telephone & Telegraph Co., Atlanta, Ga., will expend about \$30,000 for improvements to system, including laying underground wires to replace overhead wires, etc. (Previously noted to erect buildings.)

N. C., Hendersonville.—Southern Bell Telephone & Telegraph Co., main office, Atlanta, Ga., will establish central energy telephone system; exchange to be installed in building to be erected by First National Bank of Hendersonville.

S. C., Columbia.—S. D. Cox (recently noted to construct farmers' telephone line) states that at present line is for private service only; later contemplates extension to present telephone system.

Tex., Houston.—American District Telegraph Co., main office, 6 Dey St., New York, applied for franchise to establish automobile watchman, fire-alarm and burglar-alarm systems.

TEXTILE MILLS

N. C., Ansonville.—Cotton Goods.—A. H. Richardson is reported as planning organization of previously-noted company to build cotton mill; capital stock to be \$1,000,000; operated by electricity from water-power development. (See "Electric Light and Power.")

N. C., Spring Hope.—Cotton Goods.—D. L. Culpepper is interested in plan to form company for development of water-power and erection of cotton mill.

Okla., Lawton.—Cotton Goods.—Company organized. It is reported, with P. D. Anderson as president and M. A. Wert as secretary, to build cotton mill; capital stock \$400,000.

S. C., Anderson.—Laws.—Gluck Mills will add 3000 spindles, boiler and condensing equipment; cost \$30,000 to \$40,000; contracts awarded.

Tenn., Newport.—Cotton Yarn.—Clifton Cotton Mills, recently reported chartered, has organized with J. A. Fisher, president, and W. D. McSwain, secretary-treasurer; acquired Bellevue Cotton Mills of 3184 spindles, etc.

Tex., Fort Worth.—Cotton Goods.—C. K. Taylor of Natchez, Miss., is planning. It is reported, the erection of cotton mill.

Tex., McKinney.—Cotton Goods.—Texas Cotton Mill Co. incorporated with \$100,000 capital stock by J. P. Burrus, J. L. White and J. P. Crouch.

WATER-WORKS

Ark., Conway.—Plans for water-works (contract recently noted awarded to Joseph McCoppin, Little Rock) were prepared by Dickinson & Watkins (not Dickinson & Watts, as was incorrectly noted), 609 State National Bank, Little Rock, Ark.; capacity of plant 500,000 gallons; cost \$56,878.87.

Ky., Owensboro.—City Council appropriated \$20,000 for construction of water-softening plant at water-works. Address The Mayor.

La., Patterson.—City will issue \$20,000 water-works bonds. Address The Mayor.

Mo., Kansas City.—City awarded contract to Farney & Baker of Kansas City at \$90,085 to construct 8000 feet of revetment on east side of Missouri River to prevent water from flowing away from water intake at Quindaro, Kans.; E. B. Harrington, secretary. (Recently mentioned.)

N. C., Fayetteville.—City has engaged White & Platt, Durham, N. C., as engineers in charge of proposed construction of 1,000,000-gallon filter plant; bids opened about October 1. (See "Machinery Wanted.")

Okla., Allen.—City will vote October 21 on issuance of \$25,000 of bonds for construction of water-works; has contracted with Ekman & Tolbert, engineers, of Ada, Okla., to superintend construction.

Okla., Eldorado.—City voted \$15,000 bond issue to drill deep wells and furnish water supply. Address The Mayor. (Recently mentioned.)

Okla., Enid.—City is having plans prepared for water-works plant to cost \$25,000; pumps

will be located below ground and force water into cylindrical tank; reservoir will also be constructed. Address The Mayor.

Okla., Hobart.—City will vote on issuance of \$15,000 of bonds for drilling six additional shallow wells, installing motor to operate pumps and laying pipe line to settling basin in order to secure increased water supply. Address The Mayor.

Okla., Stigler.—City will expend \$75,000 to construct water-works and sewer systems; water-works will consist in installation of pumping station; brick, stone or concrete construction; about nine miles of 10-inch, 8-inch, 6-inch and 4-inch cast-iron pipe; will probably construct reservoir, supplied by 15,000-acre drainage; capacity, 15,000 gallons; contract recently noted awarded to Sequoyah Engineering Co., 609 Merchants' National Bank Bldg., Fort Smith, Ark.

Tenn., Decherd.—City awarded contract to C. E. Murray, Decherd, for installation of water-works previously noted; construction begun.

Tex., Ballinger.—City will extend water mains recently noted; cost \$16,000; cost of reservoir \$6000; J. A. Kelly, Ballinger, engineer in charge.

Tex., Dawson.—City voted \$8000 bond issue for construction of water-works. Address The Mayor.

Tex., Denison.—City will improve and extend water-works recently noted; improvements to include pump-house and pumper's dwelling; stone construction; 1,000,000 to 1,500,000 gallons capacity; will install engine and pipe line; reservoir completed; date of opening bids not decided; Alex. W. Acheson, Mayor. (See "Machinery Wanted.")

Tex., Hearne.—City is considering construction of water-works. Address The Mayor.

Tex., Lueders.—Lueders Water Supply Co. (recently reported incorporated with \$30,000 capital stock) will construct dam across Cottonwood Creek where it empties into Clear Fork of Brazos River, giving supply of about 700,000,000 gallons of water for Lueders and nearby cities; C. H. King is president; S. L. Straughan, secretary, and Charles Steffelmire, treasurer.

Tex., San Augustine.—City will vote October 18 on issuance of \$25,000 water-works bonds. Address The Mayor.

Tex., Shiner.—City voted \$8000 bond issue for extension of water-works. Address The Mayor.

Tex., Taylor.—Taylor Water Co., H. A. Bittick, manager, has preliminary surveys completed for proposed water reservoir tank to store water reserve of nine months' duration.

Va., Portsmouth.—City will vote on bonds for water works; V. O. Cassell, Jr., City Engineer.

Va., Williamsburg.—William and Mary College will have plans prepared by Architect Wiley, Lynchburg, Va., for water and light systems to cost \$25,000.

W. Va., Fairmont.—City will construct system to supply water to hilltop residents; S. B. Miller, City Engineer, and A. D. Simon, chairman water committee, are preparing plans.

WOODWORKING PLANTS

Ala., Attalla.—Sash, etc.—Attalla Lumber Co. incorporated with \$10,000 capital stock by J. R. Hays of Attalla, Daniel Morgan of Birmingham, Ala., and J. J. Cathey of Gadsden, Ala., to manufacture sash, doors and blinds.

Ark., Little Rock.—Crates, etc.—J. W. Bristow, Greenville, Ind., is considering establishment of factory to manufacture fruit crates, boxes, etc.

Ark., Mammoth Springs.—Furniture.—Moore Manufacturing Co., Springfield, Mo., contemplates. It is reported, establishment of plant in Mammoth Springs; equipment to be operated by electricity.

Fla., Ocala.—Columns, etc.—Ocala Lumber & Supply Co. will install machinery for manufacturing wooden columns, porch and stair material; building is in course of construction and will have 9000 square feet floor space; cost of building and equipment, \$10,000 to \$12,000.

Fla., Pensacola.—Wagons.—Florence Wagon Works, Florence, Ala., will establish wagon factory; plans for buildings being prepared.

Fla., Wauchula.—Crates, etc.—Wauchula Manufacturing Co., J. L. Close, manager, will erect addition to building; also 30x200-foot storage-room and warehouse and concrete steam kiln; capacity of kiln, 6000 feet of logs; contract recently noted awarded to W. E. Folsom, Wauchula.

Ga., Bowdon.—Louvorn & Willson, C. P.

Willson, manager, will rebuild plant recently noted burned; fireproof construction; 40x80 feet; cost \$1000; install woodworking machinery to cost \$4000.

Ga., Newnan.—Buggles.—H. B. Mott and H. D. Holliman will organize company with \$10,000 capital stock to establish buggy factory; have contracted with W. S. Askew Company of Newnan to erect two-story brick building; 80x110 feet.

Ga., Savannah.—Chairs, etc.—Specialty Manufacturing Co., Eli Gledhill, president, Melrose, Mass., is considering. It is reported, establishment of plant in Savannah; manufactures patented chairs, tables, couches, etc.

Ga., Savannah.—Crates and Barrels.—Truckers' Crate & Barrel Co. incorporated with \$30,000 capital stock by D. D. Pounder, E. W. Robinson and C. C. Clower.

La., Hammond.—Boxes.—Hammond Box Factory has been incorporated by Thomas W. Cate of Hammond, William R. M. Whitney of Ponchatoula, La., and others.

Miss., Columbus.—Wooden Bowls.—Southern Wood Bowl Co., R. L. Edwards, proprietor, contemplates enlarging plant.

N. C., Conover.—Vehicles.—Jerome Bollek Sons Company, recently reported incorporated with \$25,000 capital stock, will erect building; mill construction; date of opening bids not determined; install machinery to manufacture light spring vehicles; M. L. Bollek, president and secretary; Casper S. Coyer, vice-president and treasurer.

N. C., Sanford.—Furniture.—Lee Furniture Co. incorporated with \$25,000 capital stock by Lee G. Melver, Charles P. Rogers, H. M. Weller and J. R. Fitzsimmons.

Tex., Dallas.—Coffins.—Dallas Coffin Co. is preparing plans for factory building; four stories; 75x100 feet.

Tex., San Marcos.—Furniture.—Acme Manufacturing Co. will increase capital stock from \$20,000 to \$30,000.

Tex., Texarkana.—Caskets.—Texarkana Casket Co. has preliminary plans and specifications by Witt & Selbert for shop and office buildings; shop building will be one story, 102 feet long and 24 feet wide; office structure two stories, 44 feet long and 30 feet wide; both will be of concrete and brick.

BURNED

Ala., Carrollton.—W. A. Rodgers' blacksmith shop; H. B. Latham's warehouse.

Ala., Northport.—Farmers' Union warehouse.

Ala., Stevenson.—J. F. Mitchell's sawmill; estimated loss \$3000.

Ark., Jonesboro.—R. L. Cole's sawmill.

Ark., Waldo.—J. C. Love Lumber Co.'s planing mill; estimated loss \$3500.

Fla., Bland, R. F. D. from Alachua.—J. L. Matthews' cotton warehouse and cotton gins.

Ga., Louisville.—W. A. Oates' glennery; loss \$4000.

Ky., Louisville.—Wat Gay's residence; loss \$6000.

La., Baton Rouge.—Baton Rouge Lumber Co.'s planing mill and drykiln; estimated loss \$20,000.

La., Bunkie.—W. D. Maas & Co.'s cotton gin; loss \$30,000.

La., Elton.—Irry Prong Lumber Co.'s sawmill; loss \$40,000.

La., Fullerton.—Gulf Lumber Co.'s hotel and sawmill building.

La., Genesee.—Genesee Lumber Co.'s plant; estimated loss \$50,000.

La., Minden.—Barnett, Wren & Turner's sawmill; estimated loss \$6000.

La., Monroe.—O. C. Clark's stable, loss \$3000; Mayor Benson's stable, loss \$5000.

La., New Iberia.—Buildings owned by Mrs. Blanche Levy of New Orleans, La., and occupied by Jules Landry, loss \$10,000; Scharff & Son, loss \$30,000; Schwab & Carstens, loss \$15,000; Eckert Jewelry Co., loss \$2500, etc.; total loss \$100,000.

Md., Chestertown.—Buildings owned by A. W. Ormine, loss \$3000; Thomas Bradley, loss \$6000; J. H. Shuller, loss \$6000; J. S. Bradley, loss \$10,000; Wm. R. Maull, loss \$5000; Wm. A. Buck, loss \$3500; Miss Nannie Bordley, loss \$10,000; W. T. Fowler, loss \$6000; Satterfield & Davis, loss \$4000; J. S. Vandergrift, loss \$2500.

Md., Monkton.—Manor Store at My Lady's Manor; building owned by T. Melville Pearce; loss \$5000.

N. C., Goldsboro.—Eagle Cafe, building owned by W. W. Crawford; Terminal Hotel damaged, loss on building, owned by T. N. Waters, \$7000.

N. C., Walnut Cove.—Joyce & Boyle's store; loss \$7000.

Okla., Maud.—E. L. Lidson's restaurant; John Clary's building; D. H. Cooper's store; Mrs. A. M. Tucker's hotel; Tribbs & Tribbs' drug store, loss \$9000; total loss \$25,000.

Okla., Mangum.—Evans Gin Co.'s cotton gin, loss \$13,000.

S. C., Bishopville.—Durant Hotel; loss \$13,000.

S. C., Laurens.—D. H. Counts' cotton gin.

S. C., Starr.—J. N. Land's residence; loss \$4000.

Tex., Ben Arnold.—E. L. Kosel's cotton gin; loss \$9000.

Tex., Baird.—Valley Ice Co.'s plant; loss \$8000.

Tex., Chicota.—Chicota Gin Co.'s cotton gin; loss \$250.

Tex., Glen Rose.—John Keaton's cotton gin.

Tex., Kilgore.—Crim Bros.' cotton gin; loss \$1000.

Tex., Novice.—W. A. Roben's store; loss \$8000.

Tex., Pittsburg.—Reynolds Bros.' planing mill; estimated loss \$20,000.

Tex., Rosebud.—American Round Bale Co.'s cotton gin; loss \$500.

Tex., Seale.—H. A. Grayson's cotton gin; loss \$2000.

W. Va., New Cumberland.—Davis-Price Foundry Co.'s plant; estimated loss, \$10,000.

D. C., Washington.—First Church of Christ, Scientists, has plans by Marsh, Peter & Ryerson, 520 13th St. N. W., Washington, D. C., for edifice recently noted; fireproof construction; cost \$125,000.

Ga., Dublin.—Church of Immaculate Conception will erect edifice. Address Rev. Richard Hamilton, rector of Sacred Heart Church, Milledgeville, Ga.

Md., Baltimore.—St. John the Baptist Catholic Church, Paca and Saratoga Sts., is considering improvements to edifice; Rev. Joseph A. Lietuvnikas, 308 North Paca St., is pastor.

Md., Overlea.—F. E. Beall, 213 St. Paul St., Baltimore, has completed plans for edifice to be erected by Methodist Episcopal Church, E. P. Fellenbaum, pastor; will receive bids until noon September 30; structure will be one story, of stone construction; bidders estimating include John Cowan, 106 West Madison St.; Louis A. Young, 1938 East Lafayette Ave.; Albert Weber, 405 New Builders' Exchange Bldg., 15 East Fayette St., all of Baltimore.

N. C., Durham.—White Rock (colored) Baptist congregation has plans by W. Sidney Pittman (address, care of Pastor White Rock Baptist Church) for improvements to edifice recently noted; cost of improvements, including new pipe organ, \$7500.

N. C., Monroe.—St. Paul's Episcopal Church will open bids soon for erection of edifice recently noted; 28x52 feet; concrete blocks; cost \$3500; plans by Wheeler & Stern, Charlotte, N. C.

N. C., Reidsville.—Methodist Protestant Church, Rev. C. E. M. Raper, pastor, contemplates erecting edifice.

N. C., Rockingham.—Presbyterian congregation will erect \$10,000 edifice. Address The Pastor, Presbyterian Church.

N. C., Winston-Salem.—First Presbyterian congregation is considering erection of edifice. Address The Pastor, First Presbyterian Church.

S. C., Marion.—Methodist congregation will erect edifice to cost \$10,000. Address The Pastor, Methodist Church.

Tex., El Paso.—Westminster Presbyterian Church has plans by Trost & Trost of El Paso for proposed edifice; cost \$25,000.

Tex., Hubbard.—Methodist Episcopal Church South will erect brick edifice; bids will be received until 5 P. M. October 5; plans on file in office of Flanders & Flanders, architects, Dallas, Texas, and with pastor, Rev. A. E. Caraway.

Va., Lynchburg.—Mission of Good Shepherd of Colored Memorial Episcopal Church will erect edifice to cost \$2000 to \$2500. Address The Pastor, Mission of Good Shepherd.

Va., South Norfolk.—Liberty Street Methodist Episcopal Church, Rev. R. B. Scott, pastor, will erect edifice; brick; cost \$12,000 to \$15,000. (Previously mentioned.)

Va., Stafford.—Episcopal church, E. Y. Dimmick, chairman building committee, will open bids October 15 for erection of edifice recently noted; 22x48 feet; ordinary construction; plans by Philip N. Stern, Fredericksburg, Va.

CITY AND COUNTY

Fla., Ocala.—Marion county has plans by Francis J. Kennard, Tampa, Fla., for jail; date of opening bids not announced.

Fla., Pensacola.—Jail.—Escambia County Commissioners will advertise for bids for installation of two elevators and ventilating system in county jail now under construction.

Ga., Atlanta.—Almshouse.—Fulton County Commissioners are arranging to erect barracks for women convicts; also stable.

Md., Hyattsville.—City Hall.—City is planning erection of City Hall. Address The Mayor.

La., Lake Charles.—Fire Station.—City will erect central fire station at Kirby and Bilbo Sts.; C. B. Richards, Mayor.

Miss., Lucedale.—Jail.—George County Supervisors authorized \$40,000 bond issue for erection of jail and courthouse; E. V. McKay, clerk.

COURTHOUSES

Ga., Griffin.—Spalding County Commissioners will receive plans until October 4 for erection of courthouse. Among architects preparing plans are L. A. Bellonby of Griffin; Harlan Beckley of Atlanta, Ga.; A. T. Eyck Brown of Atlanta, Ga.; Cooksey & Maxwell of Atlanta, Ga.; R. H. Hunt of Chattanooga, Tenn.; Chamberlain & Co. of Birmingham, Ala.; Wallin & Young of Savannah, Ga.; E. J. Osling & Son of Montgomery, Ala.; W. Scott Moore of Indianapolis, Ind.; H. C. Aiken of Baltimore, Md.

Bids for construction will be opened February 1. (Lately mentioned.)

Miss., Lucedale.—George County Supervisors authorized \$40,000 bond issue for erection of courthouse and jail recently noted; E. V. McKay, clerk.

Okla., Madill.—Marshall county will vote November 8 on \$75,000 bond issue to erect courthouse. Address County Commissioners.

Tex., Port Lavaca.—Commissioners' Court of Calhoun County will receive bids addressed to Willett Wilson, County Judge, until October 10 for furnishing material and erection of courthouse; certified check for 10 per cent. amount of bid, payable to Willett Wilson, County Judge; plans and specifications at office of County Commissioners and of Chamberlin & Co., architects, Birmingham, Ala.; W. C. Best, clerk, Port Lavaca; cost probably \$40,000. (Previously noted.)

DWELLINGS

Ala., Birmingham.—H. O. Moore will erect \$400 residence; two stories.

D. C., Washington.—G. W. Barkman, 721 A St. S. E., has plans by A. H. Beers, 1342 New York Ave. N. W., Washington, for five dwellings from 402 to Tennessee Ave. N. E.; two stories; brick; cost \$12,000; construction by owner.

D. C., Washington.—W. E. Hill, Takoma Park, will erect six two-story brick dwellings at 732-62 Lamont St. N. W.; cost \$10,500; plans and construction by owner.

Fla., Aripaka.—E. G. Willingham, Atlanta, Ga., will expend \$3000 to erect dwelling recently noted; 42x55 feet; mill construction; plans by owner; day's work; material purchased.

Fla., Jacksonville.—Captain Potter has plans by W. B. Talley, 511 West Bldg., Jacksonville, for dwelling; cost \$3500; day's work.

Fla., Jacksonville.—N. L. Snelson has plans by W. B. Talley, 511 West Bldg., Jacksonville, for dwelling; cost \$6500; day's work.

Fla., Jacksonville.—W. W. Stewart has plans by W. B. Talley, 511 West Bldg., Jacksonville, for dwelling; cost \$5000.

Fla., Jacksonville.—W. B. Talley will expend \$3500 to erect dwelling recently noted; 26x41 feet; brick veneer; steam heat; plans by owner; day's work.

Fla., Fort Lauderdale.—Don Farnsworth will erect residence.

Fla., St. Petersburg.—E. L. Hudgin of Chicago, Ill., will erect six-room bungalow; cost \$3000.

Fla., Tampa.—W. F. Himes will erect residence; red brick; 11 rooms.

Ga., Adel.—C. G. Giddens has plans by W. B. Talley, 511 West Bldg., Jacksonville, Fla., for dwelling; cost \$5000; day's work.

Ga., Newnan.—T. P. Zellars will erect residence; two stories.

La., Florenville.—Poltevent & Favre Lumber Co. of New Orleans, La., will erect 63 cabins, etc. (See "Miscellaneous Factories.")

La., New Orleans.—Magnus Pedersen will erect residence; two stories; cost \$4000.

La., New Orleans.—J. B. Fastings will erect single cottage; cost \$4500.

Md., Baltimore.—E. J. Gallagher Realty Co., 2519 East Monument St., will erect 12 dwellings 14x44 feet on Lakewood Ave. between Monument and Madison Sts., and 36 dwellings 13x40 feet on Grove St. between Monument and Madison Sts.; brick; brick and stone fronts; hot-air heat; plans and construction by owner; cost \$41,000.

Md., Baltimore.—L. D. Davis is having plans prepared by Glidden & Friz, Glenn Bldg., Baltimore, for residence at Ten Hills; frame and stucco; two and a half stories; concrete foundation; slate or terra-cotta roof; hot-water heat; electric lights; cost \$8000; Brown & Morgan, Builders' Exchange, Baltimore, are contractors estimating.

Md., Baltimore.—August Reine, Warner and Stockholm Sts., purchased residence on Edmondson Ave. and will make improvements, including installation of electric lights, hot-water heat, etc.

Md., Baltimore.—Canton Realty & Construction Co. has plans by Jacob F. Gerwig, 210 East Lexington St., Baltimore, for five two-story brick dwellings on Elwood Ave.; 13x40 feet; cost \$5000.

Md., Baltimore.—M. Fillmore Carter, 3019 Belmont Ave., is having plans prepared by Stanislaus Russell, 2900 Clifton Ave., Baltimore, for 11 residences on Belmont Ave.; two stories; brick; frontage 14 feet; steam heat; cost \$22,000; construction by owner.

Md., Baltimore.—John Kilma, 617 Montford Ave., will erect 12 dwellings at Rosedale Terraces.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Fla., Jacksonville.—A. C. Knight will erect two-story frame apartment-house; cost \$5500.

Md., Baltimore.—Homewood Apartment Co. has plans by Glidden & Friz, Glen Bldg., St. Paul St., Baltimore, for apartment-house on University Parkway; 166x125 feet; fireproof construction; cost \$275,000.

S. C., Columbia.—E. G. Cook, president of Lion Furniture Co., contemplates erecting apartment-house; 50 to 60 rooms.

Tenn., Chattanooga.—J. C. Seiden, 203 Walnut St., is having plans prepared by Huntington & Sears, James Bldg., Chattanooga, for apartment-house; 20 rooms; two stories; brick; cost \$20,000.

Tex., El Paso.—Louis Vidal will erect apartment-house; cost \$25,000.

ASSOCIATION AND FRATERNAL

Ala., Auburn.—Y. M. C. A., E. S. Caton, president, has purchased site 125x350 feet and will erect association building; cost \$50,000.

Ga., Cuthbert.—Masonic Temple Co., incorporated; W. B. Stanford, president; C. O. Matthews, vice-president; H. J. Knowles, secretary-treasurer; contemplates erection of Masonic Temple.

La., New Iberia.—Ancient Free and Accepted Masons have plans by Stone Bros. & Crosby for Masonic Temple; three stories; brick; cost \$40,000.

Md., Cumberland.—Young Men's Christian Association plans erection of building; cost \$60,000.

N. C., Charlotte.—Ancient Free and Accepted Masons are considering locations for proposed \$30,000 to \$40,000 home for indigent Masons and their wives; F. M. Winchester, chairman of committee.

N. C., Rocky Mount.—Atlantic Coast Line Railroad, E. B. Pleasants, chief engineer, Wilmington, N. C., will expend \$22,000 for erecting and equipping Young Men's Christian Association.

S. C., Columbia.—Young Men's Christian Association will probably open bids latter part of October or first of November for erection of building recently noted; four stories and basement; 72x150 feet; fireproof construction; vacuum steam heat; electric elevator; cost \$100,000; plans by Shand & Lafaye, Columbia.

BANK AND OFFICE BUILDINGS

Ala., Birmingham.—First National Bank, W. P. G. Harding, president, purchased First National Bank building for \$1,000,000; structure is 140x100 feet and 19 stories high; various improvements are contemplated, including changes in banking department, additional entrance on Second Ave., etc.; under rearrangement bank is to have 3500 square feet of lobby.

Ala., New Decatur.—Commercial Savings Bank & Trust Co. will, it is reported, erect bank building; temporary offices in store of Speak & Mobes.

Ark., Little Rock.—Schmelzer & Schay will erect office building; two stories; brick; cost \$15,000.

Ga., Quitman.—First National Bank will open bids October 20 for erection of bank building previously noted; six stories; 33x74 feet; steam heat; electric lighting; electric elevator; cost \$50,000; plans by W. B. Camp, Jacksonville, Fla.

Ga., Savannah.—Savannah Bank & Trust Co., W. F. McCauley, president, has accepted plans by Mowbray & Uffinger, 56 Liberty St., New York, for bank and office building; 15 stories, including mezzanine floor; fireproof; exterior facings of Georgia white marble, white impervious glazed terra-cotta and

brick; steel frame; columns and floor girders of steel; basement occupied by heating, lighting and elevator plants; greater part of first floor for banking, with ceiling 26 feet high; banking-room to have mahogany cabinet work, imported marble counters and wainscoting, bronze metal screens, marble floor tiling and ornamental plastering; tellers' space covered by steel burglar-proof grilles with self-closing steel gates; safety-deposit vault enclosed in fireproof masonry walls and consist of interlining of plates of chrome steel; entrance to vault during day by self-closing steel gate, and at night through circular chrome steel door seven feet in diameter, secured by heavy bolts operated by automatic locking devices; outer door will weigh about 15 tons and entire vault about 60 tons; office corridors wainscoted and tiled with marble; steam heat; electric lighting; three hydraulic elevators; estimated cost, \$300,000; bids received about October 15. (Recently mentioned.)

Ga., Savannah.—Georgia State Savings Association has plans by H. W. Witcover of Savannah for proposed remodeling of banking quarters, and bids will soon be invited; banking offices will be enlarged by addition of portion of building now occupied by Ludden & Bates and Southern Music House; annex will be entirely remodeled, new fixtures installed, etc.

La., Lafayette.—People's Bank & Trust Co., John M. Keith, president, will open bids at once for erection of bank building recently noted; 30x60 feet; cost \$10,000.

Md., Hampstead.—First National Bank will let contract September 28 for erection of bank and office building; three stories; pressed brick; Indiana limestone trimmings; facade of vitrified brick, onyx and marble; hardwood floors; estimated cost \$9000; plans by Frank E. and Henry R. Davis, 220 St. Paul St., Baltimore, Md.; bidders estimating include John K. McIver, 309 Wilson Bldg., and Thomas P. Johns, 405 McCulloh St., both of Baltimore, and H. B. Pilcher, Pocomoke City, Md.

Mo., Kansas City.—May-Stern Realty Co., A. Waldheim, president, 11th and Main Sts., will have plans prepared by D. H. Burnham & Co., Chicago, Ill., for office and store building; 15 stories; 48x112 feet; steel and terra-cotta; fireproof; mahogany interior finish; elevators; first six stories for store; upper floors for offices.

Mo., St. Louis.—North St. Louis Savings Trust Co. will erect store and office building; three stories; brick; stone and terra-cotta trimmings; cost \$30,000.

N. C., Raleigh.—Citizens' National Bank, J. G. Brown, president, has no plans for building at present.

N. C., Raleigh.—Commercial National Bank has not definitely prepared plans for remodeling bank building recently noted.

Okla., Oklahoma City.—Mercantile Trust Co., O. W. Mitchell, president, will erect office building.

S. C., Saluda.—Planters' Bank of Saluda, J. M. Forrest, president, will erect bank building.

Tex., Greenville.—The Texas Company, Houston, Tex., will erect office building, warehouse and barns; E. E. See, superintendent of construction.

Tex., Texarkana.—Texarkana Casket Co. will erect office building; two stories; 44x30 feet; preliminary plans prepared by Witt & Selbert. (See "Woodworking Plants.")

Tex., Vernon.—Farmers' State Bank will erect bank and office building recently noted; 20x110 feet; plans not definite. J. R. Renfro may be addressed.

CHURCHES

Ala., New Decatur.—First Baptist Church, Rev. L. P. Royer, pastor, will erect \$7000 edifice.

Md., Catonsville.—Phillip Brendel, 7 Caton Ave., has plans by W. A. Foreman, 215 Courtland St., Baltimore, Md., for residence; two and a half stories; frame; slate roof and siding; concrete basing; hot-water heat; electric lights; cost \$7000.

Md., Baltimore.—A. C. Doyle, St. Paul and Saratoga Sts., will erect 12 dwellings on east side of Calvert St. near 30th St.; three stories; brick; porch front; inside polished oak and mahogany finish; electric lights; hot-water heating.

Md., Grey Rock.—Mrs. H. H. Emory and Miss L. S. Hunt have plans by Emory & Nussear, 415 Professional Bldg., Baltimore, Md., for remodeling dwelling, including erection of additional story and remodeling interior; will install hot-water heat, gas, electric lights, etc.; cost \$9000.

Md., Monkton.—T. Melville Pearce will rebuild store and dwelling reported burned; loss \$5000.

Md., Towson.—Mrs. Wm. L. Unduch, The Shirley, 205 West Madison St., Baltimore, Md., will erect residence in Aigburth Park, near Towson; frame; plans by owner.

Md., Mount Washington.—C. C. Homer, Jr., vice-president of Second National Bank, Broadway and Eastern Aves., Baltimore, Md., has plans by A. Cookman Leach, 323 North Charles St., Baltimore, Md., for residence; two and a half stories; ornamental frame; concrete foundation; slate roof; cost \$12,000.

Miss., Hattiesburg.—W. S. F. Tatum will erect \$50,000 residence.

Miss., Hattiesburg.—H. A. Camp will erect \$30,000 residence.

Mo., St. Louis.—John H. Brand will erect several cottages.

Mo., St. Louis.—George C. Paulus, 2301 Pestalozzi St., will expend \$2500 to erect dwelling recently noted; brick; gas and electric lighting.

Mo., St. Louis.—Elizabeth Welfekemper will erect two-story tenement-house; cost \$4000.

N. C., Charlotte.—St. Peter's Episcopal Church, Rev. Harris Mallinckrodt, rector, will erect rectory.

N. C., Wilmington.—L. A. H. Koeth prepared plans for residence in Winter Park; seven rooms; Dutch colonial style.

Okla., Tulsa.—P. E. Magee will erect two-story frame dwelling; cost \$4000.

N. C., Wilmington.—George Sloan has plans by L. A. H. Koeth, Wilmington, for residence; Old English style; shingle sides; cement stucco front on second story, with two-gable effect; cost \$2500.

S. C., Columbia.—Rev. J. A. Foster, pastor of Shandon Baptist Church, will erect residence; address, care of W. B. West.

S. C., Greenville.—W. R. Cely will erect residence; eight rooms; cost \$1500.

S. C., Greenville.—W. H. Cauble will erect \$3000 residence.

S. C., Greenville.—G. H. Carter will erect eight-room residence; cost \$4500.

Tex., Brownsville.—Bids will be received until November 24 for erection of three residences and one three-story building; plans at office of Cook & Co., architects, Theater Bldg., Houston, Tex., and Vivier Bldg., Brownsville.

Va., Ellerslie (not a postoffice).—David Dunlop of Petersburg, Va., will erect residence; brick, stone and stucco; 15 rooms; cost \$25,000.

Va., Norfolk.—Sacred Heart Catholic Church, York St. and Dummore Pl., Rev. Richard A. Drake, rector, will erect \$4000 rectory.

Va., Richmond.—Mrs. M. A. Burns will erect two-story frame detached dwelling; cost \$3200.

Va., Richmond.—J. H. Chappell and J. Lee Davis have plans for erection of three detached dwellings on Floyd Ave.; brick; cost \$10,000.

Va., Richmond.—W. Fred Grimmell will erect dwelling; two stories; brick; cost \$7500.

Va., Richmond.—Henry T. Hicks will erect 12-room residence; cost \$4000.

Va., Richmond.—Mrs. John T. Farmer will erect 10-room dwelling; cost \$3000.

Va., Richmond.—Miles C. Debbress will erect tenement (two dwellings); two stories; brick; cost \$2500.

Va., Richmond.—Otway S. Allen will erect three-story brick dwelling; cost \$15,000.

Va., Staunton.—C. A. Crafton will not at present erect dwelling previously noted.

Va., West Point.—J. E. McAllister will receive bids until October 5 for erection of residence; plans on file at 1106 Hull St., South Richmond, Va.

GOVERNMENT AND STATE

Md., Sykesville.—Hospital.—Bids addressed to Austin L. Crothers, Governor of Maryland, Annapolis, Md., will be received at his office until noon October 5 for erection of Cottage G, Springfield State Hospital; drawings and specifications can be seen and obtained at office of Parker, Thomas & Rice, 1109 Union Trust Bldg., Baltimore, Md.; structure will be of brick; two stories; 128x75 feet; Walter E. Burnham, Law Bldg., is estimating; Painter & Posey, Professional Bldg., Baltimore, are engineers.

Mo., Clinton.—Postoffice.—N. Yeager & Son, Danville, Ill., are lowest bidders at \$68,358 for erection of U. S. postoffice; James Knox Taylor, supervising architect, Treasury Department, Washington, D. C. (Recently mentioned.)

Okla., Enid.—State Home.—State Board of Public Affairs, Guthrie, Okla., will receive bids until October 10 for erection of administration building, Oklahoma State Feeble-Minded Home; certified check for 5 per cent. amount of bid, payable to R. J. Allen; plans and specifications on file at office of State Board of Public Affairs, Guthrie, Okla., and at office of A. A. Crowell, architect, Enid; bids to be submitted on blank form furnished by architect; estimated cost \$25,000.

HOTELS

Ark., Mena.—Commercial Club and Mena Improvement Association are promoting erection of \$10,000 hotel.

Fla., Aripaka.—R. T. Wells will expend \$2000 to erect addition to hotel recently noted; two stories; 42x12 feet; mill construction; plans by E. D. Willingham, Atlanta, Ga.; day's work.

Fla., Fort Lauderdale.—Don Farnsworth will erect hotel; 55 rooms.

Ky., Paris.—C. J. McLean, proprietor of Windsor Hotel, is reported as interested in erection of hotel; cost \$75,000.

Mo., Kansas City.—A. C. Billeke, proprietor of New Alexandria Hotel, Los Angeles, Cal., has plans by Daniel H. Burnham & Co., 1417 Railway Exchange Pl., Chicago, Ill., for hotel at Baltimore Ave. and 13th St.; 10 or 12 stories. (Previously noted.)

Tex., Quanah.—M. E. Kerrigan will expend \$20,000 for improvements to Quanah Hotel, including installation of steam heat, elevators, etc., and remodeling building.

MISCELLANEOUS STRUCTURES

Ala., Birmingham.—Clubhouse.—Edgewood Country Club, Frank Y. Anderson, president, adopted plans by Miller & Martin of Birmingham for clubhouse; site comprises 105 acres; is constructing artificial lake of 100 acres, one mile long and one-quarter mile wide.

Ala., West Lake, P. O. Bessemer.—Clubhouse.—West Lake Auto and Country Club (Lee Moody, George Rutledge and others) has plans, it is reported, for clubhouse.

Fla., Jacksonville.—Hall.—Jack England, Evansville, Ind., is considering erection of hall or coliseum for conventions, etc. Mr. England is now in Jacksonville.

Ga., Atlanta.—Clubhouse.—Brookhaven Country Club, John D. Little, president, will erect clubhouse; estimated cost \$20,000.

Mo., St. Louis.—Business Block.—J. Clarke Porter and others purchased site 105x157 feet and contemplate erecting brick building to have stores on first floor, offices on second and hall on third; cost about \$75,000.

Mo., St. Louis.—Greenhouse.—Beutel & Frederick purchased site on which to erect greenhouse.

Tex., Galveston.—E. A. Toebelman, representing company to be organized, petitioned City Commissioners for permission to erect bathhouse and pavilion on beach; structure to be erected upon concrete piling at height of about five feet above top of seawall; estimated cost \$40,000 to \$50,000.

Tex., San Antonio.—Clubhouse.—Motor Cycle Club contemplates erecting clubhouse; two stories; brick or corrugated iron.

Tex., Texarkana.—Home.—Church of the Nazarene purchased 20 acres on which to erect rescue home. Address The Pastor, Church of the Nazarene.

Va., Richmond.—Stable.—T. W. Wood & Sons will erect brick stable; cost \$2500.

W. Va., Warwood.—Town Hall.—Warwood Fire and Protective Association contemplates erecting town hall; brick; about 40x30 feet; estimated cost \$7000.

RAILWAY STATIONS

Ark., Fort Smith.—Kansas City Southern Railway, A. F. Rust, resident engineer, Kan-

sas City, Mo., will, it is reported, erect \$50,000 depot.

Fla., Klemmee.—Atlantic Coast Line Railroad, E. B. Pleasants, chief engineer, Wilmington, N. C., will, it is reported, erect passenger depot; brick; 290 feet long; about 100 feet wide.

Md., Frederick.—Frederick Railroad, O. B. Coblitz, chief engineer, will, it is reported, construct terminal stations for freight and passengers; also carhouse.

SCHOOLS

Ala., Mobile.—Mobile County School Board will receive competitive plans and specifications, subject to approval of supervising architect of the board, until October 2 for 14-room school building with auditorium at Oakdale; architects must be able to furnish bona fide bid from responsible contractor; W. H. Sledge, president, acting secretary. (Previously noted.)

Ala., Montgomery.—Alabama Normal School for Negroes is having plans prepared by W. Sidney Pittman, 494 Louisiana Ave. N. W., Washington, D. C., for \$15,000 Carnegie Library.

Ark., Brinkley.—Brinkley Academy will receive bids until September 30 for erection of brick and stone academy according to plans by Frank M. Blaisdell, architect, Fort Smith, Ark.; certified check for \$300; plans and specifications at office of J. W. Brooks, secretary board of trustees, South New Orleans Ave., or Lock Box 466, Brinkley, or may be had on deposit of \$10.

Fla., Jupiter.—School trustees have plans by E. S. Hall, Daytona, Fla., for school building recently noted; 20x70 feet; concrete blocks; date of opening bids not set.

Ga., Atlanta.—City rejected all bids for Second Ward school building, and is having plans revised by Harry Leslie Walker, Atlanta. (Previously noted.)

Ga., Brooklet.—Paul B. Lewis, clerk, will receive bids until October 14 for erection of brick school; plans and specifications at office of E. C. Horsford & Co., architects, Eastman, Ga., and at Bank of Brooklet.

Ga., Cordele.—City voted \$10,000 bond issue to erect school. Address The Mayor. (Noted in August.)

Tal., Homerville.—City has plans by W. B. Talley, 511 West Bldg., Jacksonville, Fla., for school previously noted; cost \$3000; day's work.

Ld., Bunkie.—Bids will be received until October 5 for erection of two-story-and-basement brick school; plans and specifications at office of Favrot & Livaudais, 839 Gravier St., New Orleans, La. (Previously noted.)

Miss., Hattiesburg.—State Normal College will be located at Hattiesburg; buildings to cost \$250,000; city will donate \$150,000 and 80 acres of land; Forrest county to supply \$100,000; P. M. Saunderson, chairman of building committee, Jackson, Miss.

N. C., Greensboro.—School Board has plans by Hook & Rogers, Charlotte, N. C., for Central City high-school building; cost \$25,000, exclusive of heating plant. (Recently noted.)

N. C., Greensboro.—Greensboro Female College contemplates erecting additional dormitory; cost \$25,000 to \$50,000.

Okla., Wakita.—City will erect 8 or 10-room high-school building; brick; steam heat; cost \$15,000; architect not selected; A. H. McMahon may be addressed. (Bond issue for \$20,000 recently noted.)

S. C., Furman.—James C. Furman School of Science awarded contract to Gallivan Building Co. of Greenville, S. C., for erection of proposed science hall; 80x60 feet; four stories; cost about \$50,000; J. E. Sirrine, superintendent of construction.

S. C., New Brookland.—School District No. 29 voted \$10,000 bond issue for erection of school building; L. Hall, clerk.

Tenn., Chattanooga.—J. C. Shelton, 203 stories; brick; cost \$10,000.

Tex., Flatonia.—City has voted issuance of \$12,500 bonds for erection of school. Address The Mayor. (Lately mentioned.)

Tex., Fort Worth.—Texas Christian University has plans by Waller & Fields, Fort Worth, for administration building, girls' and boys' dormitories, etc.; former three stories and basement, 125x180 feet, assembly hall to seat 1000 to 1200 people, dining hall to seat 400, reinforced concrete, cost \$100,000; latter three stories, reinforced concrete. (Lately noted.)

Tex., Laredo.—Baptist Mission College will erect building; Spanish mission style; cost \$15,000.

Tex., Palacios.—Palacios Independent School District voted \$25,000 bond issue to

erect brick school. Address District School Trustees.

Tex., Houston.—William M. Rice Institute awarded contract at \$182,430 to William Miller & Sons Company, Pittsburg, Pa., for erection of mechanical laboratory and powerhouse; 300 feet long; two stories; brick and Ozark marble.

Va., Richmond.—School Board, C. P. Walferd, clerk, will expend \$20,000 to erect addition to Chimbarazo school recently noted; six rooms and assembly hall; ordinary construction; iron stairs; steam heat; plans by Carl Ruehrmund, 918 East Main St., Richmond; bids opened September 29.

W. Va., Hinton.—Board of Education of Greenbrier District, Summers county, will receive bids until October 1 for erection of school on Sand Spring School site in sub-district No. 2; plans and specifications at office of W. F. Price, secretary of board; W. L. Wilson, president.

STORES

Fla., Daytona.—J. B. Conrad has plans by W. B. Talley, 511 West Bldg., Jacksonville, for store building; cost \$500; day's work.

Fla., Jacksonville.—H. T. Armington will erect additional story to brick building; 74.2x33.6 feet; cost \$4000.

Fla., Sanford.—N. P. Yowell & Co. have plans by W. B. Talley, 511 West Bldg., Jacksonville, for store building previously mentioned; cost \$12,500; day's work.

Md., Baltimore.—Nathan P. Corkran, 1113 East Lexington St., awarded contract to Albert Yeakel, 906 Pennsylvania Ave., Baltimore, to erect store at 723 Greenmount Ave.; two stories; 27x69 feet; slag roof; steam heat; brick construction; cost \$3000; plans by Harry Hilditch, Baltimore.

Md., Monkton.—T. Melville Pearce will rebuild store and dwelling reported burned; loss \$5000.

N. C., Charlotte.—F. D. Alexander has plans by Louis Ashbury, Charlotte, for store building recently noted; 52x75 feet; two stories and basement; mill construction; cost \$6500; install elevator to cost \$1200; day's work.

Okla., Helena.—M. G. Beatty will erect business building; two stories; brick.

S. C., Charleston.—T. A. Wilbur & Son is having plans prepared by J. D. Newcomer & Son, Charleston, for store to replace burned structure; three stories; brick; 31x29 feet; electric elevator.

S. C., Charleston.—A. R. Tomlinson is having plans prepared by J. D. Newcomer, Charleston, for rebuilding store recently burned; 32x342 feet; three stories; Washington hydraulic gray brick; Cumpro stone trimmings; patent plate-glass front; wire-glass doors and windows; fire-retarding ventilators on roof; fire doors at stairs and elevator shaft.

S. C., Greenville.—Southern Leasehold & Trust Co. organized with \$25,000 capital stock by Perry Beattie, N. C. Poe, Jr., F. W. Symmes, H. H. Thomas and S. A. Moore; will erect 12 business buildings on East Melee Ave.

Tenn., Chattanooga.—B. M. Progmor, 210 Union Ave., is having plans prepared for mercantile building; two stories and basement; brick; composition roof; cost \$10,000.

Tenn., Memphis.—George E. Witt will, it is reported, erect store on Main St.

Tex., Brownsville.—Bids will be received until November 24 for three-story brick building and three residences; plans at office of Cook & Co., architects, Theater Bldg., Houston, Tex., and Vivier Bldg., Brownsville.

Tex., Galveston.—M. Marks and Leon and H. Blum estates will erect business building; two stories; brick; cost \$6000.

Tex., Quanah.—G. Guthrie will erect store building; two stories; stone; 50x100 feet; semi-fireproof; steam heat; electric lights.

Tex., Marlin.—L. N. Stanley will erect brick business building.

Tex., Marlin.—Paul Scheiblich will erect brick business building.

Tex., Marlin.—D. Adam will erect brick business building.

Tex., Marlin.—F. S. Heffner will erect brick business building.

THEATERS

Okla., Medford.—F. E. Shore will erect theater; 44x96 feet; cement blocks.

Tex., Houston.—David Simon of Chicago, Ill., proposes erection of theater.

WAREHOUSES

Ga., Newnan.—Manget-Brannon Company will erect grain warehouse. (See "Fertilizer Factories.")

La., New Orleans.—Louisiana Railway & Navigation Co., William Edens, president, will erect warehouse on Liberty St.; 300 feet long; brick; fireproof; also having plans prepared for steel freight shed on New Basin at Carrollton Ave.

Md., Baltimore.—Eugene Blake, 15 South Gay St., is having plans and specifications prepared by Henry J. Thuley, 314 North Charles St., for warehouse; brick; three stories; location not decided.

Mo., St. Louis.—Polar Wave Ice & Fuel Co. will erect warehouse; 1½ stories; cost \$20,000.

N. C., Charlotte.—Merchants & Farmers' Bonded Warehouse Co. incorporated with

\$25,000 capital stock by C. W. Johnston, A. L. Smith and W. A. Watson.

Tex., Greenville.—The Texas Company, Houston, Tex., will erect warehouse, office building and barns; E. E. See, superintendent of construction.

Va., Altavista.—People's Warehouse Co. incorporated with \$30,000 capital stock; M. D. Turner, president; W. O. Smith, vice-president; E. A. Smith, secretary.

Va., Richmond.—American Terminal Warehouse Corporation has plans by Carneal & Johnson of Richmond for warehouse to be erected beneath viaduct; one story; brick; cost \$8000.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Md., Baltimore.—Parkway Building Co., Equitable Bldg., awarded contract to J. Morris Green, 235 Equitable Bldg., Baltimore, for remodeling two dwellings into apartment-houses; electric lights; cost \$4000.

Mo., Kansas City.—H. G. Yates awarded contract to F. M. Roux (address care of Mr. Yates) for erection of apartment and store building recently noted. (See "Stores.")

Mo., St. Louis.—F. A. Daenauer awarded contract to Chas. Klute, 2531 Virginia Ave., St. Louis, for erection of apartment-house recently noted; 20x50 feet; mill construction; hot-air heat; cost \$3700; plans by P. J. Bradshaw, 615 Liggett Bldg., St. Louis.

BANK AND OFFICE BUILDINGS

La., Decatur.—Vermilion State Bank awarded contract to Fernand Landry, Decatur, for erection of bank building recently noted; 24x50 feet; one story; brick; cost \$3000; plans by T. G. Chachere, Opelousas, La.

Md., Baltimore.—Owners' Realty Co., Chas. W. Hurst, president, Calvert Bldg., awarded contract to John K. McVey, 309 Wilson Bldg., Baltimore, for remodeling building at Saratoga and Courtland Sts. as office building; plans by Charles W. Price, 1912 West Franklin St., Baltimore. (Recently mentioned.)

Tenn., Chattanooga.—J. M. Card Lumber Co. awarded contract to A. S. Johnson, 206 North Dodds Ave., Rossville, Tenn., to erect office building; frame and stucco; shingle roofing; concrete flooring; eight rooms; electrical equipment; cost \$4000.

CHURCHES

La., Franklin.—Church of Assumption of Blessed Virgin, Rev. J. H. Trainor, pastor, has begun erection of proposed edifice; 55 feet wide and 155 feet long; Roman architecture; Eugene Guillot, New Iberia, La., is in charge of construction; cost \$32,000; plans by Barnett, Haynes & Barnett, Frisco Bldg., St. Louis, Mo. (See "Machinery Wanted.")

S. C., Columbia.—Elmwood Park Church, Rev. Carlie Courtenay, pastor, awarded contract to McA. McManus of Columbia at about \$12,000 to erect edifice; cost complete about \$17,000.

Va., Norfolk.—Methodist Episcopal Church, South, awarded contract to J. D. Anders, Norfolk, for erection of edifice in Larchmont, recently described; 35x75 feet; brick and frame; plans by R. E. Mitchell, Norfolk.

CITY AND COUNTY

Va., Norfolk.—Police and Fire Station.—Board of Awards awarded contract at \$17,963 to R. H. Richardson & Son, Norfolk, for erection of police and fire station in Berkeley Ward; plans by Lee & Diehl, 408 Seaboard Bank Bldg., Norfolk, Va. (Previously mentioned.)

Va., Richmond.—Engine-house.—Fire Commissioners awarded contract at \$10,548 to James Fox & Son, Richmond, for erection of South Richmond engine-house; plans by Carneal & Johnson, Richmond. (Recently noted.)

COURTHOUSES

La., Thibodaux.—Police Jury of Lafourche parish awarded contract at \$31,680 to Corbin Bros. for remodeling courthouse; construction begun. (Lately mentioned.)

DWELLINGS

Ark., El Dorado.—R. M. Garrett awarded contract to Thalman & Reed of Little Rock, Ark., for erection of residence; cost \$35,000.

D. C., Washington.—H. K. Fulton, 314 9th St. N. W., awarded contract to Wm. S. Spencer, 216 Bond Bldg., Washington, to repair dwelling at 1509 13th St. N. W.; cost \$3000; plans by owner.

Fla., Pensacola.—N. J. Lillard, 307 Blount Bldg., awarded contract to Pons & Sunday (address care of Mr. Lillard) for erection of dwelling recently noted; 40x75 feet; stucco and wood; cost \$5000; plans by F. C. Frederick & Hubbard, Pensacola.

Fla., Pensacola.—T. L. Harden of Englewood Heights awarded contract to W. B. Bigger of Mobile, Ala., for erection of residence; two stories; stucco; cost \$10,000.

Ga., Adel.—R. C. Woodard awarded contract to B. H. Davis (address care of Mr. Woodard) for erection of proposed dwelling; cost \$5000; plans by W. B. Talley, 511 West Bldg., Jacksonville, Fla.

Md., Baltimore.—A. E. Sullivan awarded contract to Boyd & Huff, 314 North Charles St., Baltimore, for erection of residence; two and a half stories; frame; cost \$6000; plans by Henry J. Thuley, 314 North Charles St., Baltimore. (Recently noted.)

Md., Baltimore.—Joseph F. Hirt, 2908 Jefferson St., awarded contract to Frank Novak, 2908 Jefferson St., Baltimore, for 15 dwellings in 2500 block of Ashland Ave.; two stories; hot-air heat; cost \$15,000.

Mo., St. Louis.—Jos. A. Doswald, 116 Spruce St., has plans by and awarded contract to Theo. Degenhart (address care of Mr. Doswald) for erection of dwelling recently noted; 25x50 feet; ordinary construction; hot-air heat; gas and electric lighting.

N. C., Wilmington.—J. D. Nutt awarded contract to Brunswick Wood & Lumber Co., Wilmington, for erection of proposed dwelling; cost \$2500; plans by Grossmann-Mahler Contracting Co., Wilmington.

N. C., Wilmington.—M. A. Mahler awarded contract to Brunswick Wood & Lumber Co., Wilmington, for erection of proposed dwelling; cost \$6000; plans by Grossmann-Mahler Architectural & Construction Co., Wilmington.

N. C., Wilmington.—Dr. V. S. Barbark awarded contract to Brunswick Wood & Lumber Co., Wilmington, for erection of proposed dwelling; cost \$3500; plans by Grossmann-Mahler Architectural & Contracting Co., Wilmington.

S. C., Anderson.—S. H. Byron awarded contract to J. L. Membree, Anderson, for erection of proposed dwelling; eight rooms; two stories; cost \$2200; plans by Sayre & Baldwin, Anderson.

S. C., Greenville.—Mrs. Marshall Prevost will erect \$500 residence; two stories; 8x32 feet; reinforced concrete tile; externally fireproof; steam heat; gas and electric lighting; plans and construction by J. & L. McBee, Greenville.

Va., Norfolk.—Mrs. Virginia Lowenberg awarded contract to I. C. Roberts, Norfolk, for erection of five brick residences; cost \$5051.

Va., South Norfolk.—J. R. Legum awarded contract to F. N. Henly, B St., South Norfolk, for erection of five 10-room tenement-houses; cost \$7900.

HOTELS

Ark., Marianna.—Marianna Hotel Co. awarded contract to B. M. Nelson, New Decatur, Ala., for erection of hotel; three stories; concrete, brick and stone; 75x110 feet; steam heat; electric lights; cost \$25,000; plans by Weathers-Foley Company, Seimlar Bldg., Memphis, Tenn. (Previously noted.)

D. C., Washington.—Hotel Raleigh, E. L. Weston, manager, awarded contract to George A. Fuller Company, Munsey Bldg., Washington, for erection of addition to replace present six-story portion of hotel; 12 stories; 450 rooms; four elevators; cost \$1,000,000; plans by H. J. Hardenbergh of New York. (Previously mentioned.)

N. C., Henderson.—C. F. Whitted, Norlina, N. C., and Lee Paschall, Wise, N. C., are interested in organization of company to erect 50-room hotel; contract awarded to Wise Granite Co., Wise, N. C.

MISCELLANEOUS STRUCTURES

La., New Orleans.—Clubhouse.—Rigolets Club has, it is reported, awarded contract to Cousins & Thompson, Biloxi, Miss., to rebuild burned clubhouse; cost \$8000 to \$10,000.

RAILWAY STATIONS

Okla., Chickasha.—Chicago, Rock Island & Pacific Railway Co., J. B. Berry, chief engineer, Chicago, Ill., awarded contract to A. W. Lane, Chicago, Ill., for erection of passenger station recently noted; 32x207 feet; one story; fireproof construction; cost \$35,000; plans by Jarvis Hunt, Chicago, Ill.

SCHOOLS

Fla., Sanford.—Board of Education awarded contract to G. B. Pope (address care of board) for erection of proposed school building; cost \$20,000; plans by W. B. Talley, 511 West Bldg., Jacksonville, Fla.

Mo., Joplin.—School Board awarded contract at \$8968 to Winterholder & Wooten for erection of Parr Hill school; concrete blocks; moisture proof.

Tex., Burkeville.—City awarded contract for erection of \$2800 school. Address The Mayor.

Tex., Houston.—Wm. M. Rice Institute awarded contract for erecting mechanical laboratory and power-house. (See "Electric Light and Power Plants.")

STORES

Ark., Forrest City.—E. L. Horton awarded contract for erection of store.

Ark., Helena.—J. O. Newby awarded contract to A. Westenberg, Helena, for erection of business building; two stories; brick; 24x132 feet; first floor concrete; cost \$16,000.

Ark., Little Rock.—S. D. Knox awarded contract to Will Hoffman, 1220 West 2d St., Little Rock, for erection of proposed store building; two stories; 22x50 feet; brick; ordinary construction; cost \$6000; plans by J. M. McClelen, Whipple Bldg., Little Rock.

D. C., Washington.—Mary A. W. Willeox awarded contract to John F. Newman, Colorado Bldg., Washington, for repairing building at 1729 H St. N. W.; cost \$3000; plans by T. Kent Roberts, 819 17th St. N. W., Washington.

Miss., Hattiesburg.—Judge K. McNuls awarded contract for erection of building at Main and Pine Sts.; hydraulic pressed brick with stone facings; plans by N. O. Evans, Hattiesburg.

Mo., Kansas City.—H. G. Yates awarded contract to F. M. Roux (address care of Mr.

Yates) for erection of store and apartment building recently noted; two stories; 42x90 feet; ordinary construction; cost \$10,000; plans by J. G. Braecklein, New York Bldg., Kansas City.

Mo., Kansas City.—May-Stern Realty Co., southwest corner Main and 11th Sts., awarded contracts for erection of store and office building at northeast corner of Main and 11th Sts. (See "Bank and Office Buildings.")

Tex., El Paso.—Mrs. C. N. Buckler awarded contract to Sorenson & Morgan, El Paso, for erection of store building; two stories; red brick; galvanized-iron cornices; gas and electric lights; cost \$18,000.

Tex., Houston.—M. E. Foster awarded contract to G. C. Street, Jr., Houston, for erection of store and garage recently noted; 75x70 feet; semi-fireproof construction; cost \$8000; plans by C. D. Hill & Co., Houston.

Tex., Yoakum.—S. A. Carnes & Son awarded contract to Bailey Mills Co., Victoria, Tex., for erection of business building; two stories; brick; 40x80 feet; glass front on first floor.

Tex., Wharton.—M. B. Houston has plans by and awarded contract to Jopling & Williams, Wharton, for erection of store building; one story; 96x60 feet; brick; cost \$4000.

Va., South Norfolk.—J. R. Legum awarded contract to F. N. Henly, B St., South Norfolk, for erection of two-story brick business building; cost \$4000.

THEATERS

D. C., Washington.—H. H. Elliott, 1520 14th St. N. W., awarded contract to David McCarragher, 125 G St. N. W., Washington, for erection of theater at 1402 Church St.; one story; brick; 40x100 feet; fireproof construction; hot-water heat; electric lighting; cost \$10,000; will let subcontracts; plans by B. F. Meyers, Bond Bldg., Washington.

WAREHOUSES

Fla., Wauchula.—Wauchula Manufacturing Co., J. L. Close, manager, awarded contract to W. E. Folsom, Wauchula, for warehouse and additional building for barrel and crate plant. (See "Woodworking Plants.")

N. C., Wilmington.—Seaboard Air Line Railway, W. L. Seddon, chief engineer, Portsmouth, Va., secured permit to erect third warehouse for Armour Fertilizer Co.; estimated cost \$37,500; W. R. Bousal & Co., Hamlet, N. C., has contract. (Previously mentioned.)

Va., Richmond.—Overman-Williamson Company awarded contract to W. T. Lindsay of Richmond at \$725 to erect brick and concrete warehouse.

RAILROAD CONSTRUCTION

RAILWAYS

Ark., Jonesboro.—Preston Hatcher of Jonesboro, who is promoting plans for a railway between Jonesboro and Nettleton, Ark., is reported as saying that survey will begin immediately, and that material for construction is to be purchased.

Ark., Little Rock.—On officer of the Little Rock & Hot Springs Electric Railway Co. is reported as saying that contracts will be let within 30 days for its proposed line from Little Rock to Hot Springs, Ark., about 55 miles. L. Garrett is general manager at 219½ Main St., Little Rock.

Fla., Molino.—The Jacob Lumber Co., says a dispatch, is building a short logging railroad.

Fla., Trilby.—The Atlantic Coast Line, it is reported, contemplates building a branch from Trilby to Bayport, Fla., 36 miles. E. B. Pleasants is chief engineer at Wilmington, N. C.

Fla., Woodville.—The Woodville Railroad, it is reported, contemplates extending the St. Marks branch from Spring Hill via Wakulla to Crawfordville, Ala. R. Griffith Johnson is mentioned as promoting the plan. Thos. M. Hall of Woodville is president and general manager of the railroad.

Ga., Donaldsonville.—W. J. Edwards of Sylvester, Ga., president of the Gulf Line Railway, with a party of engineers, is reported making preliminary survey for an extension from Bridgeboro, Ga., via Donaldsonville to St. Andrews Bay, Fla.

Ky., Glasgow.—The Louisville, Lincoln Farm & Mammoth Cave Traction Co., according to a dispatch from Frankfort, has filed incorporation articles at the State capital; capitalization \$1,000,000. Proposed line, as previously reported, is 50 miles long from Glasgow to Hodgenville, Ky., via Lincoln Farm and Mammoth Cave. J. M. Richard-

son is president and Charles Van Den Burgh general manager at Glasgow, Ky.

Ky., Lexington.—A dispatch from Whitesburg, Ky., says that E. S. Jonett, representing the Lexington & Eastern Railroad, and J. E. Willoughby, engineer for the Louisville & Nashville Railroad, are inspecting the proposed route for an extension of the Lexington & Eastern Railway from Jackson, Ky., to connect with the Chesapeake & Ohio Railway at the Breaks of the Big Sandy. Mr. Jonett is quoted as saying that contract for construction will be let as soon as 75 per cent. of the right of way is secured.

La., Homer.—C. O. Ferguson and A. R. Johnston, says a dispatch, have about completed arrangements for a railroad across Calhoun parish, and which will connect Homer and Minden.

La., Lake Arthur.—The Lake Arthur, Jennings & Northern Railroad, according to a dispatch, will run from Lake Arthur via Jennings to a point at or near Elton on the Frisco system. E. P. Fox is general manager and Frank Shuts engineer. Reported that grading will start within a week.

La., Rayville.—The Richland Parish Central Railroad, it is reported, has been built by the Richland Parish Lumber Co. through timber land east of Rayville, and it may be made a common carrier.

La., Oberlin.—The Oberlin, Hampton & Eastern Railroad Co., according to a dispatch, has been chartered to begin construction immediately on a line from Oberlin southeast about 20 miles to Nepheque. W. B. Williams is president; S. K. Williams, vice-president, and L. L. Williams, secretary-treasurer. The capitalization is reported at \$50,000,000.

Miss., Hattiesburg.—Plans are reported under way looking to the building of an interurban electric railway from Hattiesburg to Laurel, Miss., about 25 or 30 miles. The Hat-

tiesburg Traction Co. may be able to give information.

Miss., Meridian.—Chester A. Pond of Moorhead, Miss., promoter of the Memphis & Pensacola Railroad Co., is quoted as saying that preliminary survey is made, and it is proposed to first build 40 miles from Meridian north toward Ackerman, Miss. It is understood he is now arranging to finance the line in New York. Other reports say that either Memphis, Tenn., or Helena, Ark., will ultimately be a terminus.

Mo., Mexico.—The Chicago, Burlington & Quincy Railroad, it is reported, contemplates building an extension from Mexico to Macon, Mo., and Kansas City. W. L. Breckenridge is chief engineer at Chicago, Ill.

Mo., Houston.—The Missouri Inland & Southern Railroad, it is reported, has begun construction of its proposed line from Houston along the Ozark Divide to either Dillon or Rolla, Mo., on the Frisco road, 50 or 60 miles.

Mo., St. Louis.—The Union Terminal Co., capital \$5000, is reported incorporated to operate new terminal yards at Natural Bridge Rd. and Union Ave.; incorporators, Fred H. Holbrook, W. J. Holbrook, J. T. Moore, Fred C. Breitt and E. W. Banister.

N. C., Asheville.—Rumored that the Seaboard Air Line is contemplating an extension from Rutherfordton, N. C., to Asheville. W. L. Seddon is chief engineer at Portsmouth, Va.

N. C., Scotland Neck.—The Bowers-White Lumber Co., it is reported, will build about six miles of railroad to develop timber lands. The Merchants' Association of Scotland Neck is said to be interested.

Okla., Chickasha.—The Oklahoma Central Railway is reported to have begun construction of its \$100,000 terminals in Chickasha, including a \$20,000 depot, which are covered under the charter of the Chickasha Terminal Co. F. C. Hand is chief engineer at Purcell, Okla.

Tenn., Harriman.—According to a dispatch, survey has been made for 20 miles and construction of the proposed Harriman, Knoxville & Eastern Railroad is assured. Rights of way are being obtained. C. E. Hendrick, W. A. Rockwell and others are incorporators.

Tex., Coleman.—F. W. Steber, it is reported, is pushing survey on the Texas North & South Railroad for 350 miles from Seymour via Coleman to San Antonio, Tex. L. E. Collins is president. (See March 17.)

Tex., Comanche.—Thompson & Scott of St. Louis are reported to have general contract to extend the St. Louis Southwestern Railway from Hamilton to Comanche, Tex., about 20 miles, and subcontract has been let to J. S. McSpadden of Fort Worth. Another extension, it is said, is contemplated to the Thurber or Palo Pinto coal fields. C. D. Purdon is chief engineer at Tyler, Tex.

Tex., Cuero.—R. A. Love of Brownwood, Tex., is reported as saying that a railroad company has been organized at Cuero with \$400,000 capital stock to build a line 180 miles long from Aransas Pass to connect with the International & Great Northern Railroad near Austin, Tex. Subscriptions are asked at Austin. Proposed route is from Austin via Lockhart, Gonzales, Victoria, Goliad, Cuero, Corpus Christi and Aransas Pass. It may go to San Marcos. Negotiations with the Austin Business League. Charter is to be obtained. A report from Cuero says that the company is organized with Walter Relfert, president; R. A. Love and George J. Schleicher, vice-presidents; Lee Joseph, treasurer, and Paul Dornbluth, secretary. C. G. Breeden is a director, in addition to the first four named.

Tex., Fort Worth.—Reported that \$125,000 are already subscribed in Fort Worth for the proposed railroad promoted by C. I. Dickinson to run from Fort Worth through the country lying between the Fort Worth & Denver City Railway and the Texas & Pacific Railway. It is proposed to raise \$500,000.

Tex., Palacios.—Palacios, San Antonio & Pecos Valley Railway Co. reported chartered to build a line 160 miles long northwest from Palacios, in Matagorda county, to San Antonio, Tex.; capital \$200,000; incorporators, J. P. Pierce, Thomas H. Bonner, S. T. Best, H. W. Dean, W. H. Brooks, W. S. Baldwin, D. L. Stump, Charles Clayton, D. W. Grant and W. S. Bonner, all of Matagorda county; headquarters at Palacios. Marshall Hicks of San Antonio filed charter.

Tex., Midland.—The Rock Island system, it is reported, contemplates building a line from Midland, Tex., to Tucumcari, N. M. J. B. Berry is chief engineer at Chicago, Ill.

Tex., San Angelo.—The Kansas City, Mexico & Orient Railway is reported to have resumed tracklaying on the extension to Eldorado, 60 miles south from San Angelo.

Three miles are laid. Tracklaying will be resumed on the main line to Mertzon about October 1.

Tex., Taylor.—M. E. Hoxie of Lexington, Tex., promoter of the proposed Taylor & Somerville Short Line Railroad, has just gone over the route, according to a dispatch, with H. H. Fleider and J. V. Kincaid of Houston, and he is quoted as saying that matters are being arranged to begin construction. Line is from Somerville to Taylor and Lexington, Tex., about 60 miles. Survey is reported made and most of right of way obtained.

Tex., Tres Palacios.—The St. Louis, Brownsville & Mexico Railway, it is reported, has completed the extension of the Tres Palacios branch from Buckeye to Collegeport, 17 miles.

Va., Penhook.—George Myer of New York city is reported to have built a 12-mile lumber railroad from Penhook, on the Rocky Mount branch of the Southern Railway, to timber lands in Bedford and Franklin counties. About 20 or 30 miles more will, it is said, be constructed. Address, Penhook, Va.

Va., Roanoke.—The Roanoke & Mount Airy Southern Railroad Co. is reported chartered to build a line about 100 miles long, as previously reported, from Roanoke to Mount Airy, N. C.; capital \$10,000 to \$50,000; A. L. Sibert, president; R. H. Angell, first vice-president; C. G. Ogden, second vice-president and general manager; L. C. Stewart, secretary and treasurer, the other directors being S. B. Pace, E. A. Thurman and George W. Payne, all of Roanoke, Va.

STREET RAILWAYS

Ala., Montgomery.—The City Council, it is reported, has granted the street-railway

franchise asked for by Charles F. Woodward of Boston. Construction must begin within six months and line must be in operation within 18 months.

Md., Baltimore.—It is contemplated to build a street-car line from Walbrook, a suburb, via Forest Park, Howard Park and Villa Nova to Sudbrook Park, four miles. J. Glenn Cook, H. C. Gilbert, Guy Corkran, Richard W. Cook and T. B. Williams of Baltimore and Abbott Morris of Norfolk, Va., are interested.

Okla., Sulphur.—Reported that contract has been agreed upon for construction of a street railway in Sulphur. The Mayor may be able to give information.

Tex., Austin.—The Austin Electric Railway Co. has been granted right of way over the Congress Ave. bridge and will build an extension of 1½ miles to South Austin. W. J. Jones is president.

Tex., Cleburne.—One mile of the Cleburne Street Railway is reported completed, and grading is being pushed.

Tex., Waco.—P. A. Gorman, Street Commissioner, is reported in communication with parties who desire to build a street railway in Waco.

Va., Roanoke.—The Roanoke Railway & Electric Co., it is reported, has been authorized by the Roanoke county supervisors to build a railway on Virginia Ave. and Grandin Rd.

Mo., Kansas City.—President John M. Egan of the Metropolitan Street Railway Co. is quoted as saying that construction will begin within two weeks on the Roanoke line extension. Material has been ordered and the grading is done.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

Airship Materials.—Ferdinand Bayer, 104 West Main St., Gainesville, Fla., wants to correspond with manufacturers of and dealers in materials for construction of aeroplanes, airships, etc.; material to include steel, aluminum and engines.

Aluminum.—See "Airship Materials."

Bagging and Tie Machinery, etc.—Park A. Callis, 1023 Candler Bldg., Atlanta, Ga., wants to correspond with manufacturers of machinery for reworking bagging and ties.

Boilers.—See "Engines and Boilers, etc."

Boiler.—Imperial Heater Co., W. Z. Flannery, president, 810 Commerce Bldg., Kansas City, Mo., wants prices on boiler.

Boiler.—O. R. Whitney, 39 Cortlandt St., New York, wants one unit 300 to 500 horsepower water-tube boiler, good for not less than 150 pounds steam; prompt delivery; send specifications and price f. o. b. cars by first letter.

Brass Polisher.—See "Nickel-plating Machinery, etc."

Bridge Construction.—Bids will be received at Clerk's office, Princess Anne, Va., until 11 A. M. October 10 for construction of wooden drawbridge 190 feet long at West Neck; plans and specifications on file in Clerk's office, Princess Anne; office of A. J. Ackiss, Commonwealth's Attorney for Princess Anne County, Norfolk, Va., and at office of P. St. J. Wilson, State Highway Commissioner, Richmond, Va.; certified check, \$100.

Bridge Construction.—Yazoo County Commissioners, S. S. Griffin, clerk, Yazoo City, Miss., will award contracts October 3 for construction of three bridges—one near Carter, two near Holly Bluff and one over Newman Creek; work to be in accordance with plans and specifications filed.

Broom Machinery, etc.—W. H. Heffner, Box 151, Hendersonville, N. C., wants information and prices on machinery, etc., for small broom plant.

Building Materials and Supplies.—Piedmont Concrete Co., Charlotte, N. C., wants dealers' prices on building materials and supplies with view to representation.

Buttons.—Middle Florida Grocery Co., Live Oaks, Fla., wants prices on metal buttons for overalls.

Boiler.—Andrews Caoutchouc Brick Co., M. P. Andrews, president, 40½ Sycamore St., Petersburg, Va., will want prices on boiler.

Brick Machinery.—Andrews Caoutchouc Brick Co., M. P. Andrews, president, 40½ Sycamore St., Petersburg, Va., will want prices on brick machinery.

Canning Machinery.—W. H. Heffner, Box 151, Hendersonville, N. C., wants prices on equipment for vegetable and fruit cannery.

Cars.—Jones Purchasing Agency, Suite 1028 Andrus Bldg., Minneapolis, Minn., wants 100 ¾-gal two-foot-gauge two-way dump cars; Spokane or Nelson (B. C.) delivery preferred.

Chimney.—Department of Interior, Washington, D. C. Sealed proposals will be received at this department until 2 P. M. October 8, and then opened, for construction of radial chimney for power plant at Freedmen's Hospital and Howard University, Washington, in accordance with specifications and drawings, copies of which may be obtained upon application to chief clerk of department; Jesse E. Wilson, assistant Secretary.

Clayworking Machinery.—See "Fuller's earth Plant."

Caustic Soda.—Portsmouth Cotton Oil Refining Corporation, Portsmouth, Va., wants addresses of manufacturers of and dealers in caustic soda.

Clay-grinding Machinery.—Southern Managense Mining Co., Harrisonburg, Va., wants to correspond relative to new or second-hand machinery for grinding clay to fine smooth grade.

Conduits, etc.—War Department, Office of Chief Signal Officer, Washington, D. C. Sealed proposals will be received at this office until 11.30 A. M. October 13 for furnishing Signal Corps with following: Conduits, 500 feet each, loricated, 1 inch, 1½ inches and 3 inches, with unions; 50 terminals, cook, type M-4, 10 pair unfused, galvanized iron covered, with chain and flat faceplate to pole; 1000 feet wire, copper (National Code Standard), etc.

Cotton Waste.—Padro Hermando, Mauresa, Pa. Barcelona, Spain, wants list of manufacturers of and dealers in cotton waste (white and colored) for cleaning machinery; makers and merchants specified.

Dredge Bucket.—Dixie Concrete Co., E. G. Mallard, president, Greenville, S. C., wants prices on second-hand orange-peel bucket,

half-yard capacity; state condition of bucket and how long used.

Dredgeboat.—S. O. Carter, Cameron, La., wants second-hand dredge 30 feet wide and 6 feet deep; for cutting through low wet land and putting dirt on one side only.

Dredging.—U. S. Engineer Office, Savannah, Ga. Sealed proposals for dredging in Brunswick harbor, Georgia, will be received until noon October 27; information upon application; Dan C. Kingman, Colonel, Engineers.

Dredging.—U. S. Engineer Office, Savannah, Ga. Sealed proposals for dredging in waterway between Savannah, Ga., and Fernandina, Fla.; harbor at Darien, Ga., and Sapelo harbor, Georgia, will be received until noon October 27; information upon application; Dan C. Kingman, Colonel, Engineers.

Dredging.—U. S. Engineer Office, Jacksonville, Fla. Sealed proposals for dredging in Caloosahatchee River and entrance, Florida, will be received until 12 M. October 20; information on application; Geo. R. Spalding, Captain, Engineers.

Electrical Cable, etc.—Baltimore (Md.) Board of Awards, care J. Sewell Thomas, City Register, City Hall, will receive bids until 11 A. M. October 5 for furnishing and delivering electrical cable, transformers and switchboards to various parks in city in accordance with specifications of Park Commissioners, which can be obtained at office of board, Madison Ave. entrance to Druid Hill Park; certified check \$300; William S. Manning, general superintendent, Park Board.

Electric Lighting.—Rev. James H. Trainor, pastor Catholic church, Franklin, La., wants prices on electric lighting for \$2000 edifice.

Electrical Machinery.—Penick & Ford, Amesville, La., want prices on second-hand direct-connected direct-current generating unit, 60 or 75-kilowatt, 250-volt.

Electrical Machinery.—Geo. L. Wilson, Mayor, Walhalla, S. C., wants prices on water-wheel, alternating-current generator, switchboard, etc.; wheel to develop 450 horsepower, 60-foot head; generator to correspond; will supply city lights, distance line 7½ miles; will want line material, transformers, etc.

Electrical Machinery.—Fay Machinery Co., J. M. Fay, manager, 126 Liberty St., New York, wants prices on 75-kilowatt generator, belted, two-phase, 60-cycle, 2200 volts; pipe machine, one to six-inch, belt driven or arranged for hand belt power.

Electrical Machinery.—George Sachsenmaler & Co., 1309 Race St., Philadelphia, Pa., wants 15 or 20 horse-power 208-volt 60-cycle single-phase (Wagner preferred); also 100-kilowatt 220-volt 60-cycle two-phase alternator (standard make).

Electrical Machinery.—Big Sandy Milling Co., John G. Barnes, secretary, Louisa, Ky., wants prices on 100-light dynamos.

Electrical Machinery, etc.—Terminal Taxicab Co., 1225 20th St. N. W., Washington, D. C., wants prices on electrical plants for charging storage batteries, etc.

Engine.—Andrews Caoutchouc Brick Co., 40½ Sycamore St., Petersburg, Va., will want prices on engine.

Engine.—Imperial Heater Co., W. Z. Flannery, president, 810 Commerce St., Kansas City, Mo., wants prices on engine.

Engine.—Ellington Building Supply Co., Raleigh, N. C., wants prices on second-hand 75-horse-power Corliss engine.

Engines and Boilers, etc.—Stokes County Warehouse Co., Walnut Cove, N. C., wants prices on engines, boilers, pumps, etc.

Feed-grinding Machines.—Manufacturers, Box 665, Birmingham, Ala., want to correspond with manufacturers of machines for grinding feed.

Flour-mill Machinery.—Ashdown Flour Mill & Elevator Co., Ashdown, Ark., wants prices on flour-mill machinery and power (steam and gasoline).

Fuller's-earth Plant.—Mississippi Mineral Exploration & Development Co., Raleigh, Miss., wants complete equipment for fuller's-earth plant; to prepare earth from bed to market; various finenesses up to 200.

Gasoline Engines.—See "Airship Materials."

Gas Engines.—A. Goldwasser, Krolewska 45, Warsaw, Russia, wants to correspond with manufacturers of gas engines from ½, ¾, 1½ to 1½-horse-power capacity.

Gas-producer Plant.—Terminal Taxicab Co., 1225 20th St. N. W., Washington, D. C., wants prices on gas-producer plant.

Hat Machinery.—Arnold & Roux, 141 Rue de Javel, Paris, France, wants to correspond with manufacturers of hat machinery.

Hose, Packing, etc.—Diaphragm pumps, hose strainers, valves, cocks, grease and oil cups, lubricators, engine gongs, automatic

bells, flue ferrules, scales, garbage cans, etc. Sealed proposals for foregoing will be received at office of general purchasing officer, Isthmian Canal Commission, Washington, D. C., until 10.30 A. M. October 17, at which time they will be opened; blanks and information obtainable from office or offices of assistant purchasing agents at 24 State St., New York; 55 National Realty Bldg., New Orleans, and 1086 North Point St., San Francisco; also from United States engineer offices in Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; also Commercial Club, Kansas City; Chamber of Commerce, Quincy, Ill., and Chamber of Commerce and Board of Trade, Tacoma; F. C. Boggs, captain of engineers, general purchasing officer.

Ice Machinery.—Prosper Colony Manufacturing Co., Taft, Fla., desires correspondence on complete second-hand three-ton ice plant.

Ice Plant.—Swansboro Fish Co., Swansboro, N. C., wants to correspond with parties installing small ice plants.

Lathes.—Imperial Heater Co., W. Z. Flannery, president, 310 Commerce St., Kansas City, Mo., wants prices on lathes.

Laundry Machinery.—Chas. R. Scarborough, Conway, S. C., wants to correspond with manufacturers of steam-laundry machinery.

Lime.—F. F. Keith Company, Wilmington, N. C., wants prices delivered on burnt slack lime in 100 or 200-pound sacks; wants it to show high-grade carbonated lime, slacked; will want it delivered in car lots or schooner loads.

Locomotive.—John G. Duncan, 308 West Jackson St., Knoxville, Tenn., wants prices on second-hand logging locomotive of about 20 tons (Climax, Shea or Horsler preferred); immediate shipment; state where it may be seen.

Locomotive.—J. H. MacLeary, Suffolk, Va., wants prices on 25-ton 36-inch gauge Mogul locomotive f. o. b. Norfolk, Va.

Machine Tools.—American Manufacturing Co., Chattanooga, Tenn., wants lathes, shapers and drill presses.

Nickel plating Machinery, etc.—Imperial Heater Co., W. Z. Flannery, president, 310 Commerce Bldg., Kansas City, Mo., wants prices on nickel-plating outfit, brass polishers, etc.

Paving.—J. B. Winslett, City Secretary, Dallas, Tex., will receive bids until 3 P. M. October 5 for paving Pearl St. from Live Oak St. to Ross Ave.; each bidder to bid separately on following materials: Bitulithic pavement on concrete base; crossbedded pine block pavement on concrete base; vitrified brick block pavement on concrete base; concrete curbs; concrete gutters; combination concrete curb and gutter; certified check, \$75.

Paving.—Louis S. Belden, chairman Commissioners of Streets, Wilmington, N. C., states that proposals for paving will not be received on October 15, as recently noted; specifications for paving at some future date will be sent on request.

Paving, etc.—R. W. Ervin, Mayor, Avis, P. O. at Hinton, W. Va., will receive bids until October 3 for certain paving and sewerage work.

Paving, etc.—Bob Parman, City Clerk, Oklahoma City, Okla., will receive bids until 9 A. M. October 4 for grading, paving, etc., 30th St. from Walker to Shartel Ave. and Lee Ave. from 30th to 36th St., each to be paved width of 26 feet; plans and specifications on file in office of City Clerk; each bid to be accompanied by certified check for 3 per cent. of bid; will also receive bids until 9 A. M. October 4 for construction of street and alley crossings as per list and specifications on file in office of sidewalk inspector; each bid to be accompanied by certified check for 2 per cent. of bid.

Paving.—Bids will be received at office of Ennis M. Douglass, City Clerk, Memphis, Tenn., until noon September 30 for improving Penody Ave.: 17,000 square yards asphalt pavement, 17,000 square yards concrete foundation, 400 linear feet of 36-inch curb and gutter, 800 square feet concrete gutter; alternate bid on 17,000 square yards of bitulithic pavement on concrete foundation will also be received; work will be let as whole; specifications and profiles may be seen at office of City Engineer; certified check, \$350; E. H. Crump, Mayor.

Paving, etc.—Maury Nicholson, City Engineer, Birmingham, Ala., will receive bids until 11 A. M. October 5 for certain brick paving, street grading, retaining walls, etc.; specifications can be obtained from City Engineer.

Paving Materials.—Wm. E. Anderson, chair-

man street committee, Farmville, Va., wants information on paving material; proposed pavement to be bitulithic or vitrified brick, with granolithic sidewalks and cement gutters on hillsides.

Power Hammer.—Roanoke Iron Works, Roanoke, Va., wants prices on power hammer (medium size), operated by compressed air, for blacksmith shop.

Power Press.—Emporia Cornice and Skylight Works, H. T. Klugel, proprietor, North Emporia, Va., will want prices on power press for metal-working plant; electric power.

Pressing Machines.—Arnorn & Roux, 141 Rue de Javel, Paris, France, wants to correspond with manufacturers of machines for pressing cloth.

Pump.—See "Well-drilling Machinery."

Pump, Piping, etc.—Office of treasurer, Southern Branch N. H. D. V. S., National Soldiers' Home, Virginia. Sealed proposals will be received until 1.30 P. M. October 25, and then opened, for furnishing labor and material in accordance with instructions and specifications, copies of which, with blank proposals, can be had upon application to the treasurer, as follows: Drainpipe, general mess hall and barrack Company L; drying yard enclosure; ice-storage room; furnishing and installing pump in hospital; steam-fitting from power-house to main laundry and fire department; John T. Hume, treasurer.

Pumps.—See "Engines and Boilers, etc."

Pumps, Piping, etc.—Proposals will be received at Bureau of Yards and Docks, Navy Department, Washington, D. C., until 11 A. M. October 8 for pumps, piping and appurtenances for fuel-oil and gasoline storage tanks at Bradford, R. I.; Norfolk, Va.; Charleston, S. C., and Key West, Fla. Plans and specifications can be obtained on application to bureau; deposit of \$25 required to secure plans; Wm. M. Smith, Acting Chief of Bureau.

Pumping Plant.—Chas. C. Shorkley, 709 Empire Bldg., Knoxville, Tenn., wants estimates on cost of installation, power and maintenance of sewerage pumping plant; capacity 50 gallons per minute against station head of 70 feet; pressure line 2000 feet long; power available is 550-volt, direct-connected, 110 alternating current, three-phase or single-phase, 60-cycle; automatic starting or stopping device; state size of pressure line and power consumed per gallon ejected at maximum capacity.

Rail.—Jones Purchasing Agency, Suite 1028 Andrus Bldg., Minneapolis, Minn., wants 50 tons 20-pound rail; 20-foot lengths; Spokane or Nelson (B. C.) delivery.

Rail, etc.—Sabel Bros., Jacksonville, Fla., want prices on 60-pound relay rail with angle bars.

Reinforcing Material.—Piedmont Concrete Co., Charlotte, N. C., wants dealers' prices on reinforcing material with view to representation.

Road Construction.—Sealed bids will be received by special committee of Calcasieu parish (La.) and Orange (Tex.) Commercial Club until October 6 for building public highway from point in Louisiana, opposite Orange, across shallow marsh, 3.46 miles in length; work to be done by floating dredge; dirt thrown from one or both sides (preferably one side, in which case long boom will be required); specifications obtainable, on request, from S. R. Shepherd, secretary Commercial Club, Orange.

Road Construction.—Bids will be received at office of R. S. Barbour, chairman road committee, South Boston, Va., until 10.30 A. M. October 4 for rubblestone paving in Halifax county; specifications can be seen in office of P. St. J. Wilson; State Highway Commissioner, Richmond, Va.; Bank of South Boston and Planters and Merchants' National Bank, South Boston; specifications furnished on application to Mr. Wilson; certified check, \$250.

Road Grading, etc.—Capt. David L. Stone, U. S. A., Constructing Quartermaster, Fort Sill, Okla., will receive bids until 10 A. M. October 15 for grading roads and constructing concrete walks in new artillery post, Fort Sill; specifications, blueprints and further information on application; certified check for \$5 required to insure return of plans, etc.

Rubber Webbing.—Middle Florida Grocery Co., Live Oak, Fla., wants prices on rubber webbing for overalls.

Sewer Construction.—See "Paving, etc."

Sewer Construction.—City of Clearwater, Fla., will receive bids until October 15 for construction of sanitary sewerage system; approximately 2½ miles pipe, 8-inch to 15-inch; manholes, flush tanks, etc.; specifications obtainable from Thos. J. Sheridan, Town Clerk; plans on file at engineer's

office; certified check for 5 per cent. to accompany bid; rights reserved; Wm. J. Lyon, consulting engineer, 305 Duval Bldg., Jacksonville, Fla. (Lately mentioned. This is change of date.)

Sewer Construction.—Charles Wheeler, Jr., City Clerk, Muskogee, Okla., will receive bids until 5 P. M. October 17 for construction of storm sewer in District No. 12; work will consist of 2000 cubic yards brick or concrete masonry in three to five-foot sewers; 20,000 cubic yards excavation; 16,000 feet of tile pipe, 12 inches to 33 inches, with all necessary manholes and other appurtenances; plans and specifications on file in office of City Engineer, or may be secured upon payment of \$5; proposals to be made on blank forms furnished by city and be accompanied by certified check for \$5000.

Sewing Machines.—Middle Florida Grocery Co., Live Oak, Fla., wants information and prices on sewing machines for manufacture of overalls.

Sewing Machines.—Arnorn & Roux, 141 Rue de Javel, Paris, France, want to correspond with manufacturers of blind-stitch sewing machines (same type as "Acme" of Pittsburgh).

Steam Shovel.—Eastern Railway Supply Co., J. E. Harvey, proprietor, 413 American Bldg., Baltimore, Md., wants prices on Nos. 1 and 9 Thew steam shovel.

Steel.—See "Airship Materials."

Structural Iron and Steel.—Piedmont Concrete Co., Charlotte, N. C., wants dealers' prices on structural iron and steel with view to representation.

Tin Tobacco Tags.—H. J. Kline, Alliance O., wants to correspond with manufacturers of tin tobacco tags or dealers in cut tin.

Transmission Lines (Electricity).—L. F. Dickson, Mayor, Opelika, Ala., wants esti-

mates and information on material and construction of light pole line.

Viaduct Construction.—St. George Richardson, County Engineer, Memphis, Tenn., will receive bids until noon October 3 for construction of 140 feet of steel viaduct on Brunswick and Covington Road, about one mile from Brunswick, Tenn.; plans and specifications on file in office of County Engineer; certified check \$50.

Water-works.—City of Denison, Tex., Alex. W. Acheson, Mayor, will extend water-works; will require 17,000 feet new pipe line, pumping station, engine, etc.

Water-wheels.—See "Electrical Machinery."

Water-works.—City of Fayetteville, N. C., will open bids about October 1 for construction of 1,000,000-gallon filter plant; White & Platt, Durham, N. C., engineers in charge.

Window-blind.—Swansboro Fish Co., Swansboro, N. C., wants to correspond with window-blind manufacturers; wants blind that will hold clasp in being turned and closed.

Well-drilling Machinery.—Home Oil & Gas Co., John M. Fletcher, member of committee, Kosciusko, Miss., wants complete equipment of cable drilling tools, with power, for drilling oil and gas wells.

Well-drilling Machinery.—Trad Nougéaim & Co., Beyrouth, Syria, want prices on machine that will force water from source however deep.

Woodworking Machinery.—Battley Machinery Co., Rome, Ga., wants prices on second-hand planer and matcher to dress 12-inch, 14-inch or 16-inch wide, 8-inch thick (S. A. Woods preferred).

Woolen Machinery.—John W. Mooney, Box 64, Princeton, W. Va., wants addresses of manufacturers of woolen machinery.

Zinc Oxide.—Charles R. Fife Commission Co., 1052 Pierce Bldg., St. Louis, Mo., wants prices, etc., on zinc oxide.

INDUSTRIAL NEWS OF INTEREST

Canvas Belting List Changed.

Announcement is made that the price-list of standard stitched canvas belting has recently been changed, a new list having been adopted by the Canvas Stitched Belt Manufacturers' Association, to take effect October 1, 1910.

Contract for Pulp Mill.

The contract for the erection of a pulp mill for the Union Bag & Paper Co. at Cap de la Magdaleine, Three Rivers, Quebec, Can., has been awarded to Frank B. Gilbreth, Inc., 60 Broadway, New York. George F. Hardy, 309 Broadway, New York, is the engineer in charge of construction.

Receive \$20,000 Paving Contract.

Among prominent Southern contractors for street paving, cement sidewalks, curbs, gutters, foundations, bridge work, macadam roads, etc., are Bigler Bros., main office, Mobile, Ala. This company has recently been awarded a \$20,000 paving contract at Middletown, Ohio.

Emeritus Railroad Representatives.

During the visit of representatives of the Queen and Crescent Route and the Queen and Crescent Despatch to the Cincinnati Industrial district and the Ohio Valley Exposition on September 13 and 14, they were entertained by the Weir Frog Co. of Cincinnati. This company is prominent among Cincinnati industries and manufactures frogs, switches, crossings, rail braces, etc.

Wants to Interest Capital.

A Southern manufacturer who has from \$2000 to \$10,000 invested in the manufacture of wooden bowls announces that he has a surplus of power and room and desires to interest others who will invest a like amount of capital in order that the trade may be enlarged and other articles manufactured. For information address R. L. Edwards, Columbus, Miss.

Desires to Change Position.

For personal reasons a commercial secretary of 10 years' experience in publicity and commercial club work desires to change his position. He is at present employed in a city of 10,000 inhabitants and can furnish references from present and former employers. Correspondence is invited and may be addressed to No. 684, care of Manufacturers Record.

Selling Cold-Storage Doors.

R. E. Jones, Hagerstown, Md., has completed arrangements to have the selling of his wood and fireproof cold-storage doors and the Victor ice-recording chutes handled entirely in New York. These doors and chutes have become well known and are

widely used by ice-making and cold-storage plants, packing plants, etc., in all parts of this country. The selling end of the trade will hereafter be handled exclusively by the Refrigerating Supplies Co., 161 Washington St., New York.

Back to Florida.

The real estate firm of C. C. Robertson Sons Company has discontinued its offices at Knoxville, Tenn., and C. C. Robertson, the senior member, has returned to his former home at Jacksonville, Fla., where he is associated with Ernest C. Budd under the firm name of Budd & Robertson, Rische Bldg., Forsyth St. This company will handle real estate in Florida, and Mr. Robertson will continue to keep in touch with coal and timber lands in Tennessee, Kentucky, North Carolina and North Georgia.

A Plastic Metallic Packing.

A new plastic metallic packing for steam, air, water, gas, ammonia, etc., is being introduced by the Glacier Metal Co., Richmond, Va. This packing is manufactured from an alloy of white metal, and can be made into ribbons which are claimed to be pliable, not scoring the rods and showing no corrosion when coming in contact with acids. Different sizes are not required to be carried in stock, as a rope of the packing can easily be made into the size required for packing rods.

The Amazonia Rubber Exchange.

The Amazonia Rubber Exchange, executive offices at 97 Munsey Bldg., Washington, D. C., has incorporated to deal in the products of the valley of the Amazon River, the Mississippi River and other places. It proposes to handle principally hevea or para rubber and conserve the growth of young trees. It also intends to utilize large areas of suitable land for systematic cultivation by labor of the natives under the direction of a Brazilian who is familiar with the product. J. Orton Kerby is president of the company; A. Franklin Campbell, vice-president and treasurer, and John A. Emslie, secretary.

Farquhar Products at Expositions.

In connection with the exhibit of the Good Roads Machinery Co. of Kennett Square, Pa., at the Appalachian Exposition, Knoxville, Tenn., the A. B. Farquhar Company, Limited, York, Pa., has its double-cylinder road-hauling engine on exhibition. It also has one of its regular portable engines and boilers in this exhibit, and is shipping a similar engine and boiler, together with a double-cylinder road-hauling engine, to be exhibited at the Alabama State Fair, Birmingham, beginning October 6. This exhibit will be in charge of R. E. Pool, representative of the Gallon Iron Works Co., Gallon, O.

The Farquhar double-cylinder road-hauling engine has a straight-line drive from the crankshaft to the main axle, dispensing with intermediate or idler gears, while the traction engine is mounted on heavy steel channels and side plates, entirely independent of the boiler. The gearing is all steel, made from accurately-cut gear patterns, and is claimed to be smooth running, durable and quiet. Other features of the engine include a steel cannon box in one solid piece of steel; brass bushed bearings, not only on the engine crank, but on the countershaft and main axle; two cylinders, 8x10; steam pressure, 150 pounds; engine speed, 250 R. P. M.; road speed, 2.3 miles per hour; rear drivers, 6x20, with flat cleats one inch high and three inches wide, and front wheels 48x14, smooth.

Will Sell at Bankrupt Sale.

The attention of prospective purchasers is invited to an announcement offering at bankrupt sale a modern showase, office furniture and fixture factory. The buildings are new, of concrete and brick construction, and contain over 100,000 square feet of floor space. All equipment is modern and driven by cheap electric power, the plant being equipped with an automatic fire extinguisher with 30,000-gallon steel tank. The sale will be at public outcry on November 22, and information regarding it may be had from Newsom Cooper, trustee, Columbus Showase Co., Columbus, Ga., or Slade & Swift, attorneys, Columbus, Ga.

Thomas Grate Bar Co.

The Thomas Grate Bar Co. of Valdosta, Ga., which was incorporated last week with a capital stock of \$1,000,000, manufactures the Thomas elliptic grate bars, and has been shipping from its Valdosta plant to Mississippi, Tennessee, North and South Carolina and Florida. This company does not seek to build a large factory at any point, but will provide plants sufficient to take care of the trade adjacent to such plants, the policy being to localize and popularize the grate-bar industry. The Thomas bar is offered as being adapted to every purpose and for every fuel that burns on a grate bar. Ed L. Thomas, patentee of the bar, is in charge at Valdosta, the company having offices also in the Brown-Marx Bldg., Birmingham, Ala.

To Arrange for Enlarging Facilities.

A. R. Reiche, president of the Orenstein-Arthur Koppel Company, manufacturer of light steel dump cars and portable tracks, with general offices in the Machesney Bldg., Pittsburg, left on September 15 for New York, whence he sailed the following Saturday for Germany. He will consult with the general officers of the company in Berlin with regard to enlarging the American plant, which is at Koppel, Pa. This town was built by the Koppel Company, and is situated about 20 miles from Pittsburg on the line of the Pittsburg, Fort Wayne & Chicago Railroad. The increase in trade has rendered the present plant too small, and it will probably be increased to at least double its present capacity in order to meet the demands of the present and provide room for future growth.

Will Add to Their Facilities.

Slaysman & Co. have recently purchased property at 801-55 East Pratt St., Baltimore, Md., where they have located their general offices and established a machine shop for the manufacture of the well-known Slaysman automatic can-making machinery, power presses and other engineering specialties. They also handle engineering supplies, gas and gasoline engines and gas-producing plants. This company has also installed at its shops at Front and Ploverman Sts., Baltimore (American Compressor & Pump Co., manufacturer of the Peerless air compressor), a new Otto gas-producing plant and a dynamo for lighting purposes. The plant is compact and economical and will largely increase the production of the compressor shops.

Dodge Pulley as Auto Wheel.

A new use has been found for the Dodge wood split pulley, according to the following statement vouchered for by S. A. Emery, manager of the New York branch of the Dodge Manufacturing Co., who supplied the requirements: "Recently while a large automobile was on a tour of the northern part of New York State the front wheel was broken beyond repair. A wood pulley was suggested, and this, with a bushing, was hastily secured. It was fitted to the axle, and then in place of the wheel and under its own power the machine was driven, with its occupants, to a railroad station some distance away, where it was loaded on a flat car and shipped to a point containing garage facilities." Dodge pulleys are extensively used in

the manufacture of autos at the plants of Buick, Maxwell-Briscoe, Chalmers, E. M. F. and others, but this is the first instance recorded where one has served as a wheel. They are manufactured by the Dodge Manufacturing Co., main office and plant, Mishawaka, Ind.

New Oil for Locomotive Headlights.

In order to meet the demand for a headlight that will produce a better light than the oil lamp at present in general use, the Galena Signal Oil Co., Franklin, Pa., is introducing an improved oil which is claimed to meet the requirements. This oil is known as Galena railway safety oil "B," and recent government tests made by the Bureau of Standards at Washington, it is said, show it to produce, with headlights of ordinary construction, a minimum of 1800 candlepower, and with headlights equipped with 16-inch optical lens, costing no more initially than the ordinary reflector, and much less for maintenance, a minimum of 2400 candlepower. Exhaustive service tests on one of the prominent railways of the country is said to have proven its adaptation to this purpose. The high fire test of this oil is claimed to enable it to withstand the great heat generated by headlight burners without becoming gaseous, a condition often developing with inferior oils and resulting in the consumption of more oil than is necessary. Its use is said to insure immunity from danger resulting from smoked chimneys, damaged reflectors and the frequent burning up of headlights, and reduces to a great extent the labor necessary in caring for headlights.

Establishes Two New Offices.

For the convenience of its customers and to meet the demands of its rapidly growing trade in the vicinity of Atlanta, Ga., and Rochester, N. Y., the H. W. Johns-Manville Company, main office, 100 William St., New York, has established an office in each of these cities. The Atlanta office is located in the Empire Bldg. in charge of W. F. Johns, who has been traveling this territory for the company for a number of years, and H. P. Domine, formerly with the Buffalo branch of the company, is in charge of the Rochester office, which is located at 725 Chamber of Commerce. Since establishing its Atlanta office the company has closed contracts with the following companies to supply them with asbestos fireproof roofing: Cherokee Fertilizer Co., Columbia, S. C., 500 squares; Hartsville Fertilizer Co., Hartsville, S. C., 500 squares; Lancaster Fertilizer Co., Lancaster, S. C., 500 squares; Montezuma Fertilizer Co., Montezuma, Ga., 705 squares; Orangeburg Fertilizer Co., Orangeburg, S. C., 250 squares; Cherokee Fertilizer Co., Macon, Ga., 275 squares; Ertman Fertilizer Co., Charleston, S. C., 1000 squares, and Hartsville Oil Mill, Hartsville, S. C., 200 squares. The company has also closed through its Atlanta office a number of contracts for supplying steam insulating materials and other products.

TRADE LITERATURE.

Stark Alumaloyd Sheets.

Alumaloyd sheets are said to have rare paint-absorbing and retaining qualities, making them an ideal metal for automobile use. These sheets are manufactured by the Stark Rolling Mill Co., Canton, O., and are briefly described on a folder which the company is distributing.

The Phoenix.

The Phoenix, a journal devoted to belt engineering, has been issued for September by the New York Leather Belting Co., 51 Beekman St., New York, and 44 Franklin St., Chicago. This publication is illustrated, and contains timely and useful information for belt users and others.

A Du Pont Explosive.

A pamphlet illustrating and describing Du Pont Monobel No. 1, an explosive for quarry and ore mine blasting, has been issued by the E. I. Du Pont de Nemours Powder Co., Wilmington, Del. It is claimed that this explosive does not require thawing, is practically fumeless and is as strong as an equal weight of 60 per cent. dynamite.

Pamphlet on Vanadium Steel.

To meet certain special engineering conditions it has become necessary, it is said, to develop and introduce alloy steels. This has led to the production of what is known as vanadium steel, which may contain, in addition to the usual ingredients, vanadium alone, vanadium and chrome or nickel, or vanadium, chrome and nickel. There is an increasing demand for vanadium steel, which is claimed to be due to the high ratio of its

elastic limit to its ultimate tensile strength. Its great resistance to failure under dynamic stress repeatedly applied, and its great strength and toughness, all of which are necessary requirements in the design of locomotives, automobiles, bridges and any parts of moving machinery requiring increased resistance to failure through repeated progressive applications of dynamic stresses. Vanadium steel is manufactured by the Carnegie Steel Co., general offices, Carnegie Bldg., Pittsburg, Pa., and is comprehensively described in a pamphlet which the company is distributing.

Chicago Concrete Mixer.

Illustrative and descriptive data regarding the Chicago concrete mixers, together with an information table, are contained in a pamphlet which is being distributed by the Chicago Concrete Machinery Co., 221 Grand Ave., Milwaukee, Wis. This company manufactures the Chicago mixers in various styles and sizes, and will supply information concerning them upon request.

Buffalo Vacuum Pumps.

In sectional catalogue No. 228, which has been issued by the Buffalo Steam Pump Co., Buffalo, N. Y., endeavor has been made to list all such vacuum pumps and condensers as are used in ordinary service and to show their general appearance by illustration. Buffalo vacuum pumps and condensers have been widely introduced and are guaranteed to perform the work for which they are recommended. They are manufactured in various styles and for all requirements by the Buffalo Steam Pump Co., whose products also include steam-power and centrifugal pumping machinery, etc.

The Gilbert Wood Split Pulleys.

In presenting its catalogue containing illustrative and descriptive data, with price-list, of Gilbert wood split pulleys the manufacturer of these products calls attention to that portion of the publication devoted to styles B and C pulleys, with interchangeable bushings. These are carried in stock at all times in a complete assortment of sizes from three inches in diameter upward. The latter part of the catalogue is devoted to styles A and D special iron-center pulleys, which are made only on order for extra heavy work, such as main drives, trip hammers, dynamos, etc. Gilbert wood split pulleys are manufactured by the Saginaw Manufacturing Co., Saginaw, Mich.

Keller-Duplex Vacuum Cleaners.

What is claimed to be a thoroughly efficient and economical vacuum cleaning plant of one-sweeper capacity is the Keller-Duplex vacuum cleaner for permanent installation. This device is recommended for use in residences, stores, hospitals, apartments, office buildings, clubs, theaters and other structures, a single machine being adapted for use in any building 50 feet square and up to four stories in height, or it may be used in a building 40x75 feet or its equivalent. For larger structures two or more machines are recommended in preference to a large single plant operating several sweepers. The Keller-Duplex vacuum cleaners are manufactured by the Keller Manufacturing Co., general offices at 21st St. and Allegheny Ave., Philadelphia, and are illustrated and described in a pamphlet which the company is distributing.

Aleo Motor Trucks.

A motor truck said to be well balanced within itself and designed to meet an average need is offered by the American Locomotive Co., 1886 Broadway, New York, and 2501 Michigan Ave., Chicago. This is the Aleo motor truck, which has been successfully used for commercial purposes, and is claimed to represent the foremost thought of officers of the American Locomotive Co. when that engineering organization first established an automobile department in 1905. It was then realized that the power truck and wagon would largely supersede horse-drawn vehicles for hauling merchandise, and that the industrial end of motor-car manufacture would be extensive and permanent. The work of designing a practical motor truck was begun at the same time as the manufacture of passenger motor cars. At the beginning of its manufacture the company established the policy that not a piece of metal should enter into the vehicle nor a feature introduced that had not first been carefully designed and thoroughly tested by expert engineers and metallurgists. Its policy is also to forge its axles, jack-shafts, brackets, torsion-rods and other such essential parts in its own plant, which is equipped with all modern facilities for its needs.

OBITUARY.

Death of John Franklin Robinson.

Announcement is made of the death of John Franklin Robinson of Pittsburg, Pa., which occurred on September 9. At the time of his death Mr. Robinson was the senior member of the firm of Robinson & Orr of Pittsburg, well known as dealers in new and relaying steel rails, frogs, switches and other railway supplies.

FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office MANUFACTURERS RECORD,
Baltimore, Md., September 28.

The Baltimore stock market during the past week remained quiet. There was some revival of interest in United Railways issues upon reports of a change of control, but nothing definite developed. In the trading United Railways common sold from 14 1/4 to 14 3/4; do. trust certificates, 14 1/4 to 15; do. incomes, 60 1/4 to 61 1/4, with last sale at 60 3/4; do. funding 5s, 82 1/4 to 83 1/4; do. do. scrip, 84 1/2 to 84; United 4s, 84 1/2 to 85; United Light & Power 4 1/2s, 89; Consolidated Gas, Electric Light & Power preferred, 90; do. 4 1/2s, 79 to 82; do. notes, 98 1/4; Consolidated Gas 5s, 108; do. 4 1/2s, 91; Seaboard Air Line 4s, 84 1/2 to 84; do. do. stamped, 82 3/4 to 83 3/4; do. three-year 5s, 90 3/4; do. 10-year 5s, 90 3/4; Consolidated Cotton Duck common, 4 1/4; Mt. Vernon-Woodberry Cotton Duck 5s, 71 1/2 to 72 1/2; G. B. S. Brewing 1sts, 42.

Bank stock sold as follows: Citizens', 39 3/4; Bank of Commerce, 30; Mechanics', 27. Maryland Casualty sold at 95 3/4 to 96; Maryland Trust common, 68; American Bonding, 77 1/4 to 79.

Other securities were traded in thus: Fairmont & Clarksburg Traction preferred, 75; Virginia Midland 2d, 100 1/2; Norfolk & Portsmouth Traction 5s, 82; Atlantic Coast Line convertible debenture 4s, 96 3/4 to 97; Georgia & Alabama consolidated 5s, 103 1/4 to 104; Northern Central Railway stock, 126 to 125; Baltimore Brick preferred, 25; Potomac Electric Power Con. 5s, 100 1/2; Augusta Railway & Electric 5s, 101 1/2; West Virginia Central 6s, 100 1/2; Fairmont & Clarksburg Traction 5s, 96; Seaboard & Roanoke 5s, 105 3/4; Savannah, Florida & Western 5s, 108 3/4; Maryland Electric 5s, 97 1/2 to 97 1/4; City & Suburban (Washington) 5s, 100 3/4 to 100 1/2; Baltimore Electric 5s, stamped, 89 1/2 to 90; Charleston & Western Carolina 5s, 105 1/2; Baltimore Traction (North Baltimore Division) 5s, 100 1/4; Virginia Midland 5th, 104 1/4; Baltimore City 3 1/2s, 1980, 86 1/2; Richmond & Danville Gold 6s, 106 1/4; Baltimore, Sparrows Point & Chesapeake 4 1/2s, 92 to 92 3/4; Georgia Southern & Florida 5s, 106 1/2; Norfolk Street Railway 5s, 104; Northern Central 4s A, 110; Atlanta Consolidated Street Railway 5s, 104; Atlantic Coast Line of Connecticut, 230; City & Suburban (Baltimore) 5s, 105 1/2; Consolidation Coal, 107; Norfolk Railway & Light 5s, 97 1/4; Savannah, Florida & Western 6s, 122 1/2; Atlantic Coast Line consolidated 4s, 95 3/4; Atlantic Coast Line of South Carolina 4s, 97; Florida Southern 4s, 91 1/2; Alabama Consolidated Coal & Iron common, 20.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended
September 28, 1910.

Railroad Stocks.	Par.	Bid.	Asked.
Atlantic Coast Line.....	100	100	100 1/2
Atlantic Coast of Conn.....	100	22 1/2	23
Charleston Consolidated.....	50	32	33
Fairmont & Clarks, Trac. Pfd.....	100	72	73
Georgia Sou. & Fla. 1st Pfd.....	100	92	93
Maryland & Pennsylvania.....	100	22	23

Norfolk Railway & Light.....	25	23
Seaboard Company Common.....	100	194 1/2
Seaboard Company 2d Pfd.....	100	100
United Ry. & Elec. Co.....	50	14 1/2 14 3/4

Bank Stocks.

Bank of Baltimore.....	100	123 1/2 124
Citizens.....	10	39 1/2 40
Exchange.....	100	159 160
Farmers & Merchants.....	40	45 1/2 47
First National.....	100	135 139
Howard.....	10	13
Merchants.....	100	179
National City.....	100	125
Union.....	100	120 125

Trust, Fidelity and Casualty Stocks.

American Bonding.....	25	78 1/2 79
Baltimore Trust.....	100	163
Maryland Trust.....	100	60 68
Maryland Casualty.....	25	95 96
Mercantile Trust & Deposit.....	50	137

Miscellaneous Stocks.

Ala. Con. Coal & Iron.....	100	18 30
Ala. Con. Coal & Iron Pfd.....	40	50
Con. Cotton Duck Common.....	50	3 1/2 4 1/2
Con. Cotton Duck Pfd.....	50	14 20
Con. Gas, Elec. Lt. & P. Com.....	50	59 60
Con. Gas, Elec. Lt. & P. Pfd.....	89	92
Consolidation Coal.....	100	106 1/2 108
G. B. S. Brewing Co.....	100	2 1/2
Georges Creek Coal.....	100	6
Mer. & Miners' Trans. Co.....	100	72

Railroad Bonds.

Atlanta & Birmingham 4s.....	83 1/2	85
Atlantic Coast 1st 4s.....	95 1/2	96
Atlantic Coast Conv. Deben. 4s.....	96 1/2	96 1/2
At. Coast (Conn.) 4s, Cfs., 5-20s.....	88	88 1/2
Balto. & Annapolis S. L. 5s.....	104 1/2	105
Baltimore & Harrisburg 5s.....	104 1/2	105
Baltimore & Harrisburg Ext. 5s.....	102 1/2	103
Carolina Central 4s.....	92	92
Charleston & West. Car. 5s.....	105	106 1/2
Coal & Iron Railway 5s.....	93 1/2	94
Florida Southern 4s.....	91	92
Georgia & Alabama 5s.....	103 1/2	103 1/2
Georgia, Car. & North. 1st 5s.....	104 1/2	105
Georgia Pacific 1st 6s.....	113 1/2	114
Georgia Southern & Florida 1st 5s.....	105	106
Macon, Dublin & Savannah 5s.....	98	98
Maryland & Pennsylvania 4s.....	87	87
Petersburg Class B 6s.....	116	117
Potomac Valley 1st 5s.....	105	106
Richmond & Danville 6s.....	106	106 1/2
Savannah, Fla. & West. 6s.....	124	124
Seaboard Air Line 4s.....	84	84 1/2
Seaboard 4s, Stamped.....	83 1/2	84
Seaboard Adjustment 5s.....	70	71
Seaboard 10-year 5s.....	99 1/2	100
Seaboard 3-year 5s.....	99 1/2	99 1/2
Seaboard & Roanoke 5s.....	105 1/2	105 1/2
South Bound 5s.....	105	106
Suffolk & Carolina 5s.....	97	97
Virginia Midland 2d 6s.....	100 1/2	100 1/2
Virginia Midland 6s.....	106	106
Western Maryland 4s.....	85 1/2	86
Western N. C. Con. 4s.....	105	106 1/2
West Virginia Central 1st 6s.....	100 1/2	100 1/2
Wilmington & Weldon 5s.....	109	109

Street Railway Bonds.

Anacostia & Potomac 5s.....	100	100 1/2
Anacostia & Potomac 5s, 4th.....	100 1/2	103
Atlanta Con. St. Ry. 5s.....	100	104 1/2
Augusta Railway & Electric 5s.....	100	102
Balto., Sp. Pt. & C. 4 1/2s.....	92 1/2	93 1/2
Baltimore Traction 1st 5s.....	106	106
Baltimore Traction (N. B.) 5s.....	111 1/2	112
Central Railway (Balto.) Con. 5s.....	106	106
Charleston Con. Elec. 5s.....	94	94
Citizens' R. L. & P. of N. C. 5s.....	75	75
City & Suburban 5s (Wash.).....	106 1/2	106 1/2
Fairmont & Clarksburg Trac. 5s.....	95 1/2	96 1/2
Lake Roland Elevated 5s.....	110 1/2	110 1/2
Lexington Railway 1st 5s.....	87	88
Maryland Electric Railways 5s.....	97	97 1/2
Memphis Street Railway 5s.....	97	98 1/2
Metropolitan 5s (Wash.).....	107	107
Norfolk & Portsmouth Trac. 5s.....	84 1/2	85
Norfolk Railway & Light 5s.....	97	98
Norfolk Street Railway 5s.....	102 1/2	103
United Railways 1st 4s.....	84 1/2	85 1/2
United Railways Inc. 4s.....	60 1/2	60 1/2
United Railways Funding 5s.....	83 1/2	83 1/2

Miscellaneous Bonds.

Baltimore Electric 5s, Stp.....	89	90
Consolidated Gas 5s.....	107 1/2	109
Consolidated Gas 4 1/2s.....	91	92
Consolidation Coal Refdg. 4 1/2s.....	92	93
Con. Gas, Elec. Lt. & P. 4 1/2s.....	80 1/2	81 1/2
Con. Gas, Elec. Lt. & P. Notes.....	98	98 1/2
G. B. S. Brewing 1st 4s.....	41 1/2	42
G. B. S. Brewing Income 5s.....	87	87
Jamison C. & C. Georges' Creek 5s.....	87 1/2	87 1/2
Maryland Steel Co. 5s.....	100 1/2	101 1/2
Mt. Vernon-Woodly's Cot. Duck 5s.....	72 1/2	72 1/2
United Elec. Lt. & P. 4 1/2s.....	89	90 1/2

SOUTHERN COTTON-MILL STOCKS.

Quotations Furnished by William S. Glenn, Broker, Spartanburg, S. C., for Week Ending September 26.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.).....	90	90
Aiken Mfg. Co. (S. C.).....	160	160
American Spinning Co. (S. C.).....	52 1/2	52 1/2
Anderson Cotton Mills (S. C.).....	100	100
Arcadia Mills (S. C.).....	100	100
Arkwright Cotton Mills (S. C.).....	100	103
Augusta Factory (Ga.).....	60	65
Avondale Mills (Ala.).....	116	116
Belton Mills (S. C.).....	140	140
Brandon Mills (S. C.).....	99	102
Brook Mills (S. C.).....	135	135
Cannon Mfg. Co. (N. C.).....	135	135
Cabarrus Cotton Mills (N. C.).....	130	135
Chadwick Mfg. Co. (N. C.) Pfd.....	100	100
Chiquola Mfg. Co. (S. C.).....	190	190
Clifton Mfg. Co. (S. C.).....	105	105
Clinton Cotton Mills (S. C.).....	130	130
Columbus Mfg. Co. (Ga.).....	93	94
Courtney Mfg. Co. (S. C.).....	100	100
Dallas Mfg. Co. (Ala.).....	99	99
Darlington Mfg. Co. (S. C.).....	78	78
D. E. Converse Co. (S. C.).....	100	100
Drayton Mills (S. C.).....	95	100
Eagle & Phenix Mills (Ga.).....	117	117
Easley Cotton Mills (S. C.).....	175	185
Enoree Mfg. Co. (S. C.).....	57	60
Enoree Mfg. Co. (S. C.) Pfd.....	96	100
Enterprise Mfg. Co. (Ga.).....	80	85
Exposition Cotton Mills (Ga.).....	200	200
Gaffney Mfg. Co. (S. C.).....	75	75
Gainesville Cotton Mills (Ga.).....	75	75
Glenwood Cotton Mills (S. C.).....	80	80
Gluck Mills (S. C.).....	100	102
Granby Cot. Mills (S. C.) 1st Pfd.....	35	45
Graniteville Mfg. Co. (S. C.).....	155	165
Greenwood Cotton Mills (S. C.).....	57	60

Grendel Mills (S. C.).....	100	110
Hartsville Cotton Mill (S. C.).....	175	175
Henrietta Mills (N. C.).....	100	175
Inman Mills (S. C.).....	104	108
King Mfg. Co., J. P. (Ga.).....	90	93
Lancaster Cotton Mills (S. C.).....	130	130
Lancaster Cot. Mills (S. C.) Pfd.....	97	100
Langley Mfg. Co. (S. C.).....	120	127
Laurens Mills (S. C.).....	127	135
Limestone Mills (S. C.).....	155	160
Lockhart Mills (S. C.).....	75	76
Lockhart Mills (S. C.) Pfd.....	90	100
Loray Cotton Mills (N. C.) Pfd.....	95	97 1/2
Mariboro Cotton Mills (S. C.).....	75	85
Mills Mfg. Co. (S. C.).....	102	102
Molloy Mfg. Co. (S. C.).....	105	110
Monaghan Mills (S. C.).....	109	112
Monarch Cotton Mills (S. C.).....	106	107
Newberry Cotton Mills (S. C.).....	125	130
Ninety-Six Cotton Mills (S. C.).....	140	150
Norris Cotton Mills (S. C.).....	125	130
Olympia Cotton Mills (S. C.).....	90	90
Orr Cotton Mills (S. C.).....	105	105
Pacolet Mfg. Co. (S. C.).....	101	101
Pacolet Mfg. Co. (S. C.) Pfd.....	90	102
Peizer Mfg. Co. (S. C.).....	169	169
Piedmont Mfg. Co. (S. C.).....	175	177
Poe Mfg. Co., F. W. (S. C.).....	170	180
Saxon Mills (S. C.).....	130	130
Sibley Mfg. Co. (S. C.).....	71	78
Spartan Mills (S. C.).....	135	140
Trion Mfg. Co. (Ga.).....	130	130
Tucapau Mills (S. C.).....	90	90
Union-Buffalo (S. C.) 1st Pfd.....	74	80
Union-Buffalo (S. C.) 2d Pfd.....	25	25
Victor Mfg. Co. (S. C.).....	117	125
Warren Mfg. Co. (S. C.).....	107	107
Warren Mfg. Co. (S. C.) Pfd.....	106	110
Washington Mills (Va.).....	28	28
Washington Mills (Va.) Pfd.....	120	110
Whitney Mfg. Co. (S. C.).....	120	120
Wiscasset Mills (N. C.).....	120	125
Woodruff Cotton Mills (S. C.).....	118	122
Woodside Cotton Mills (S. C.).....	105	110
Watts Mills (S. C.).....	95	100
Williamston Mills (S. C.).....	120	125

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for Week Ending September 26.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.).....	70	75
Aiken Mfg. Co. (S. C.).....	90	90
American Spinning Co. (S. C.).....	160	160
Anderson Cotton Mills (S. C.).....	50	50
Arkwright Mills (S. C.).....	103	103
Augusta Factory (Ga.).....	60	65
Avondale Mills (Ala.).....	116	125
Belton Mills (S. C.).....	130	140
Bibb Mfg. Co. (Ga.).....	114	114
Brandon Mills (S. C.).....	99	101
Cabarrus Cotton Mills (N. C.).....	125	140
Chadwick-Hoskins Mfg. Co. (N. C.).....	100	100
Chadwick-Hoskins Mfg. Co. (N. C.) Pfd.....	100	102
Chiquola Mfg. Co. (S. C.).....	170	180
Clifton Mfg. Co. (S. C.).....	105	105
Clifton Mfg. Co. (S. C.) Pfd.....	101	101
Clinton Cotton Mills (S. C.).....	120	130
Columbus Cotton Mills (Ga.).....	93	98
Courtenay Mfg. Co. (S. C.).....	90	100
Dallas Mfg. Co. (Ala.).....	110	110
Darlington Mfg. Co. (S. C.).....	80	85
Drayton Mfg. Co. (Ala.).....	100	100
Eagle & Phenix Mills (Ga.).....	117	125
Easley Cotton Mills (S. C.).....	175	185
Enoree Mfg. Co. (S. C.).....	55	65
Enoree Mfg. Co. (S. C.) Pfd.....	95	100
Enterprise Mfg. Co. (Ga.).....	80	85
Exposition Cotton Mills (Ga.).....	195	200
Gaffney Mfg. Co. (S. C.).....	75	80
Gainesville Cotton Mills (Ga.).....	70	75
Granby Cot. Mills (S. C.) 1st Pfd.....	35	45
Graniteville Mfg. Co. (S. C.).....	160	165
Greenwood Cotton Mills (S. C.).....	58	61
Grendel Mills (S. C.).....	105	110
Henrietta Mills (N. C.).....	160	175
King Mfg. Co., John P. (Ga.).....	90	90
Lancaster Cotton Mills (S. C.).....	130	130
Lancaster Cot. Mills (S. C.) Pfd.....	97	100
Langley Mfg. Co. (S. C.).....	117	125
Laurens Cotton Mills (S. C.).....	130	130
Limestone Mills (S. C.).....	150	170
Lockhart Mills (S. C.).....	75	80
Lockhart Mills (S. C.) Pfd.....	90	100
Loray Mills (N. C.) Pfd.....	95	98
Mariboro Cotton Mills (S. C.).....	75	82
Mayo Mills (N. C.).....	165	185
Mills Mfg. Co. (S. C.).....	100	102
Mills Mfg. Co. (S. C.) Pfd.....	100	109
Monaghan Mills (S. C.).....	115	117
Monarch Cotton Mills (S. C.).....	102	107
Newberry Cotton Mills (S. C.).....	125	140
Ninety-Six Cotton Mills (S. C.).....	140	150
Olympia Cot. Mills (S. C.) 1st Pfd.....	90	95
Orangeburg Cotton Mills (S. C.).....	100	105
Orr Cotton Mills (S. C.).....	100	105
Pacolet Mfg. Co. (S. C.).....	101	101
Pacolet Mfg. Co. (S. C.) Pfd.....	90 1/2	100
Peizer Mfg. Co. (S. C.).....	160	160
Piedmont Mfg. Co. (S. C.).....	175	177
Poe Mfg. Co. (S. C.).....	170	180
Richland Cotton Mills 1st Pfd.....	45	45
Richland Cotton Mills (N. C.).....	100	105
Roanoke Mills (N. C.).....	153	160
Saxon Mills (S. C.).....	125	125
Sibley Mfg. Co. (Ga.).....	71	72
Spartan Mills (S. C.).....	130	140
Springstein Mills (S. C.).....	100	100
Tucapau Mills (S. C.).....	250	250
Trion Mfg. Co. (Ga.).....	130	130
Union-Buffalo Mills (S. C.) 1st Pfd.....	70	75
Victor Mfg. Co. (S. C.).....	117	120
Warren Mfg. Co. (S. C.).....	107	107
Warren Mfg. Co. (S. C.) Pfd.....	106	110
Washington Mills (Va.).....	28	28
Washington Mills (Va.) Pfd.....	106	110
Whitney Mfg. Co. (S. C.).....	120	125
Williamston Mills (S. C.).....	120	130
Wiscasset Mills (N. C.).....	120	125
Woodruff Cotton Mills (S. C.).....	118	125
Woodside Cotton Mills (S. C.).....	105	110
Woodside Cot. Mills (S. C.) Pfd.....	96	100

FINANCIAL CORPORATIONS.

Ala., Birmingham.—Gen. Louis V. Clark, it is reported, will organize a new bank in Birmingham.

Ala., Jasper.—Official: Central Bank & Trust Co. organized at Jasper; incorporated with \$50,000 capital. Incorporators: H. W. Cranford of Jasper, Ala.; F. A. Merrell, Carbon Hill, Ala.; W. C. Clark, Chickasaw, Ala.

Ala., Montgomery.—The Sullivan Bank & Trust Co. has, it is announced, been organ-

ized and will begin business on Commerce street October 3; capital \$100,000 subscribed. John P. Kohn will be president, Frank D. Kohn vice-president, both of Montgomery, Ala., and Russell Sullivan of New Orleans cashier; directors, Martin H. Sullivan of New Orleans, C. R. Sullivan, John P. Kohn and Frank D. Kohn.

Ala., New Decatur.—The Commercial Savings Bank & Trust Co. is reported to have opened a branch bank in South New Decatur, Ark., Prescott.—First National Bank of Prescott; capital \$50,000. M. W. Gresson, W. B. Waller, Wm. W. Rice, H. V. Scott and J. S. Regan are the organizers.

Ark., Manila.—E. L. Caraway and others are reported to have organized a new bank for Manila; capital \$20,000; expected to begin business about October 1.

Ark., Williford.—The Sharp County Bank is reported chartered; capital \$15,000. Benj. N. Yates is president; Calvin J. Wilson, cashier.

Fla., Jacksonville.—The Syrian Investment Co. of Jacksonville, capitalization \$10,000, is reported organized and to have filed charter to deal in real and personal property; incorporators, A. Sallburg, A. David and J. K. David.

Fla., Tampa.—Official: Wall Realty & Investment Co. of Tampa Incorporated; capital \$10,000; begins business October 1. J. Edgar Wall is president, Perry G. Wall vice-president, Thos. C. Hammond secretary and manager.

Fla., Tampa.—George N. Hurt & Co. Incorporated for insurance agency business; capital stock \$30,000; president, George N. Hurt; vice-president, J. M. Harvey; secretary and treasurer, Percy R. Taylor; directors, J. M. Harvey, J. R. Tatum, George N. Hurt, Claude R. Park and Percy R. Taylor.

Ga., Fitzgerald.—Official: American State Bank, 219 Central Ave., is chartered; capital \$50,000. Business began September 19. W. R. Paulk is president, P. F. Clark active president and cashier, W. H. Kendrick vice-president, C. Z. Walker assistant cashier; directors, John D. Walker of Sparta, Ga.; Otis H. Elkins, R. L. Duckworth, Eli W. Walker, Arch Griffin, J. B. D. Paulk, P. F. Clark, Wilfred Lane, L. L. Griner, W. R. Paulk and W. H. Kendrick.

Ga., Marshallville.—Georgia Banking Co. of Marshallville chartered; capital \$30,000; incorporators, J. C. Walker, A. J. Hamilton and T. S. Taylor.

Ga., Pelham.—Official: First National Bank of Pelham is approved; capital \$40,000. Final action not yet taken by the Comptroller of the Currency; hope to begin business October 1. H. H. Merry and others are incorporators.

Ga., Rockledge.—The Bank of Rockledge is a new institution just organized, says a dispatch, with C. B. Williams president.

Ga., Screven.—Citizens' Bank of Screven is reported organized; capital \$50,000; Dr. T. F. Robinson, president; W. M. Harvey, Jr

Men's Building and Loan Association into a bank.

Tenn., Bethpage.—The Bethpage Bank, says a dispatch, has completed its building and will begin business immediately; capital \$10,000. M. B. Pardue is president and A. J. Sparkman cashier.

Tex., Buda.—Farmers' State Bank of Buda reported organized; capital \$10,000; surplus \$500; directors, S. A. Heep, W. D. Carrington, E. J. Cleveland and W. S. Birkwell of Buda; Judge T. B. Cochran and J. W. Hoopes of Austin, Tex.

Tex., Dodsonville (via Wellington).—Charter filed: First State Bank of Dodsonville; capital \$10,000; incorporators, C. C. Hightower, W. S. Cross, G. W. Wilks, M. L. Cowan, J. B. Castleberry, T. R. T. Orth and others.

Tex., Fort Stockton.—Official: First National Bank of Fort Stockton chartered; capital \$25,000; began business September 21; C. A. Brown of Alpine, Tex., president; F. S. Wilson and R. E. Taylor of Fort Stockton, Tex., vice-presidents; John M. Odom, cashier.

Tex., Runge.—Official: Runge German Building Association, capital \$2000, which began business last January, is chartered; C. F. Steves, president; Alfred Tips, secretary; Julius Bennett, treasurer.

Tex., Vernon.—Official: Farmers' State Bank of Vernon chartered; capital \$30,000; to begin business about October 1; Dr. H. H. Rhoads, president; W. H. Evans and Fred Street, vice-presidents; F. L. Massie, cashier; E. Rhoads, assistant cashier; J. R. Renfro, J. F. White, F. Gerhausen, J. H. Pendleton, J. E. Pearce and A. J. Haney, directors.

Va., Disputanta.—The Bank of Disputanta, it is reported, has begun business; capital \$15,000.

Va., Highland Springs.—Official: Highland Springs Building and Loan Association of Highland Springs incorporated; capital \$1000 to \$50,000; begins business October 1; Frank P. Read, president; Wm. H. Phillips, vice-president; John Fry, secretary; Wilbert C. Beadles, treasurer.

W. Va., Winona.—Winona National Bank authorized to begin business; capital \$25,000; Lee Long, president; H. O. Boley, vice-president; W. W. Michael, cashier.

NEW SECURITIES.

Ala., Mobile.—An election for November 8 is reported called on \$500,000 of 5 per cent. 20-year road bonds for Mobile county; denomination \$500.

Ala., Wetumpka.—Official: A vote is ordered for November 8 on \$170,000 of Elmore county bonds for road improvements. This denies report that bonds had been voted.

Ark., Morrilton.—Reported that a bid of 28½ was accepted from the Mercantile Trust Co. of St. Louis for the \$16,000 of 6 per cent. sewer construction bonds offered September 15; denomination \$500.

Fla., Port Tampa.—Bids will be received, it is reported, until 4 P. M. November 1 for \$25,000 of 5 per cent. 20-year water-works bonds. R. E. Davis is City Clerk.

Fla., St. Petersburg.—Bids will be received until 8 P. M. November 3 for the \$100,000 of 6 per cent. 20-year improvement bonds recently voted; denomination \$1000. W. F. Dwyne is City Clerk.

Fla., Tarpon Springs.—Reported that the \$15,000 of 6 per cent. 10-20 street improvement bonds were sold recently at 100.53.

Ga., Brooklet.—Reported that \$7000 of 6 per cent. school-building bonds have been voted.

Ga., College Park.—Official: Bids will be opened within 30 or 60 days for the \$65,000 of 5 per cent. 20-year water, sewer and electric-light plant bonds voted May 30; denomination \$1000. Baynard Willingham is chairman of the finance committee of the City Council. Address, Egan, Ga.

Ga., Cordele.—A dispatch says that \$10,000 of school bonds have just been voted.

Ga., Crawford.—Reported voted: \$5000 of 6 per cent. school-building bonds. J. H. Roland is Mayor.

Ga., Decatur.—The Grand Jury of this (De Kalb) county has recommended an issue of \$300,000 of road bonds.

Ga., Elberton.—Bids will be received until 6 P. M. October 3 for \$25,000 of street improvement bonds. W. F. Jones is City Clerk and treasurer.

Ga., Kirkwood.—M. D. Thompson, 4 North Broad St., Atlanta, Ga., chairman of the water and sewer committee, says that a vote will be taken October 4 on \$60,000 of 5 per cent. bonds for domestic sewer and water service; denomination \$1000. One bond will mature each year from January 1, 1916, to 1931, inclusive, and two bonds each year from January 1, 1932, to 1941, inclusive.

Ga., Macon.—It is contemplated to issue \$500,000 of water-works purchase bonds which may be voted on at the November election.

Ga., Marshallville.—Official: Bids will be received until October 12 for the \$10,000 of 5 per cent. 20-year school-building bonds voted July 26; denomination \$100. R. H. Richard is Mayor.

Ga., Savannah.—The proposition to issue bonds for extending the house-drainage system of the city will, it is stated, be considered by the City Council. An issue of \$300,000 is talked of.

Ky., Henderson.—Reported that a vote will be taken November 8 in Henderson county on \$20,000 of 4 per cent. jail-repair bonds.

Ky., Lexington.—City Council has called a vote at the November election on the proposition to pledge the city's credit to the extent of \$500,000 for street improvements.

Ky., Lexington.—A report says it is contemplated to issue \$500,000 of bonds for street improvements.

Ky., Paducah.—A vote will be taken November 8. It is reported, on \$50,000 of McCracken county jail bonds.

La., Homer.—Reported that bids were rejected for the \$40,000 of 5 per cent. 20-40 water bonds offered September 15. G. G. Gill is Town Clerk.

La., Patterson.—The Supreme Court, it is reported, has declared valid the \$30,000 of water-works bonds.

La., Thornwell.—A dispatch says that a drainage district has been formed and \$30,000 drainage canal bonds were voted.

Md., Crisfield.—No award was made, it is reported, of the \$15,000 of 4½ per cent. refunding bonds offered September 14. W. Dougherty is City Clerk.

Miss., Cleveland.—John Naveen & Co. of Chicago are reported to have purchased the \$20,000 of 6 per cent. 20-year water-works bonds, besides \$5000 of 6 per cent. 5-year sidewalk bonds, both at par.

Md., Brunswick.—Bids will be received, it is reported, until 8 P. M. October 4 for \$5000 of 4½ per cent. 20-year water bonds; denomination \$100. A. B. Hodges is Council clerk and treasurer.

Md., Baltimore.—At the fall election loans will be voted on thus: \$3,000,000 general refund; \$1,500,000 schoolhouse; \$2,000,000 dock improvement, and \$1,000,000 Jones' falls improvement; total, \$7,500,000.

Miss., Hattiesburg.—A letter to the Manufacturers Record confirms the report that Hattiesburg will issue \$150,000 of 5 per cent. 20-year normal school bonds. This (Forrest) county will also issue \$100,000 of 5 per cent. 20-year bonds for the same purpose. Bids are to be received within the next 60 days.

Miss., Brandon.—J. A. Gaydye, Chancery Clerk, will, it is reported, receive bids until 10 A. M. November 7 for the \$30,000 of 5 per cent. 10-25-year road bonds of Rankin county mentioned September 22.

Miss., Osyka.—Bids will be received until 8 P. M. October 11 for \$20,000 of 6 per cent. 20-year water-works and electric-light bonds. Clinton Thompson is Mayor.

Miss., Osyka.—Bids will be opened at 8 P. M. October 11 for \$20,000 of 6 per cent. water-works and electric-light bonds. Clinton Thompson is Mayor.

Miss., Lucedale.—Nothing definite yet done about the proposed issue of \$30,000 of courthouse and \$10,000 of jail 5 per cent. 5-30-year bonds of George county. None yet sold. E. V. McKay is Chancery Clerk at Lucedale, Miss.

Miss., Starkville.—Bids will be received until 8 P. M. October 15 for \$14,000 of school building and improvement and \$2000 of street and sidewalk 6 per cent. 20-year bonds; denomination \$500. Walter Page is City Clerk.

Miss., Wiggins.—An election will be held, it is reported, September 29 on \$6500 of 5 per cent. street bonds and \$1000 of 5 per cent. refunding bonds.

Miss., Starkville.—E. O. McIlwain, Chancery Clerk, writes that the matter of \$20,000 of road bonds for district No. 1 of Oktibbeha county will be taken up at the meeting on the first Monday in October.

Mo., Kansas City.—Official: Report is confirmed that the \$800,000 of municipal bonds were sold to the National City Bank of New York city, the Harris Trust and Savings Bank of Chicago and the Fidelity Trust Co. of Kansas City at a premium of \$200.

Mo., Illinois.—\$5000 of sewer and street-improvement bonds are reported to have been voted.

Mo., Windsor.—Bids will be received until 7:30 P. M. October 3. It is reported, for \$33,000 of water-works and \$16,000 of sewer bonds by L. D. Chisman, City Clerk; denomination \$500 and \$1000; mature in 5, 10, 15 and 20 years.

Okla., Calumet.—George I. Gilbert of Oklahoma City, it is reported, purchased the \$10,000 of 6 per cent. 20-year school-building bonds voted last month; denomination \$500.

Okla., Eldorado.—A dispatch says that \$15,000 of bonds have been voted for water-works.

Okla., El Reno.—Bids will be received until 8 P. M. October 15 for \$50,000 of 5 per cent. 20-year city hall bonds. J. A. La Bryer is Mayor.

Okla., El Reno.—Bids will be received until 8 P. M. November 1 for \$250,000 of 5 per cent. 25-year water bonds. J. A. La Bryer is Mayor.

Okla., Hobart.—City Council has called an election for \$15,000 of bonds for water-supply addition.

Okla., Madill.—Reported that this (Marshall) county will vote November 8 on \$75,000 of courthouse bonds.

Okla., Mulhall.—Reported that \$20,000 of school-building bonds were recently voted.

Okla., Muskogee.—The Commissioners of this (Muskogee) county, it is reported, have been petitioned to order an election for \$200,000 of road and bridge bonds.

Okla., Soper.—Bids will be received until noon October 10 for \$9000 of 6 per cent. 10-25-year water-works bonds. Harley Hughes is Town Clerk.

S. C., Conway.—A movement is under way in this (Horry) county to issue \$100,000 of bonds for road improvements.

S. C., Greenville.—An election is about to be held on \$35,000 of Greenwood bonds to aid the Greenville, Spartanburg & Anderson Railway Co., of which W. J. Thackston is president.

S. C., Orangeburg.—City Council is reported to have ordered election October 25 on \$20,000 of bonds to aid the Orangeburg Railway, promoted by Wm. C. Wolfe and others.

S. C., New Brookland.—Official: Bids will be received until October 1 for the \$10,000 of 6 per cent. 20-year school-building bonds voted April 17; denomination \$1000; dated July 1. L. Hall is clerk of the school district.

Tenn., Gleason.—W. B. Troy of Memphis, a contractor, is reported to have purchased the \$8000 of concrete walk bonds for which bids were received August 12.

Tenn., Memphis.—\$100,000 of 4½ per cent. 25-year State Normal School bonds are to be issued by Memphis city; dated September or October, 1910; denomination \$1000. Bids will be received some time in October. Address The Mayor.

Tex., Amarillo.—The \$10,000 of 5 per cent. 20-40 fire station bonds recently offered were sold to the Harris Trust and Savings Bank of Chicago; denomination \$1000.

Tex., Austin.—The Attorney-General is reported to have approved the following bonds: \$4000 city of Childress 5 per cent. 10-40 water-works; \$8000 Dickens county 5 per cent. 10-20 courthouse; \$2000 Jones county 5 per cent. 5-20 school district 52; \$2000 Armstrong county 5 per cent. 10-20 school district 5; \$600 Hopkins county 5 per cent. 10-20 school district 3; \$3500 5 per cent. 10-40 Chambers county school district 19; \$4000 Groesbeck school district 5 per cent. 5-40s; \$2000 Vernon City school-building 5 per cent. 10-40s; \$8000 Terrell City light and water-works 5 per cent. 10-40s.

Tex., Belton.—The \$11,000 of water-works bonds to be voted on October 18 are 5 per cent. 10-40s.

Tex., Burnet.—Election October 22, according to a dispatch in this (Burnet) county on \$18,000 of bridge bonds.

Tex., Cuero.—The Commissioners of this (De Witt) county have, it is reported, repealed the order to vote on bonds for roads and bridges. Therefore, a vote will be taken at the November election only on a special tax for those purposes.

Tex., Dawson.—\$8000 of water-works bonds are reported voted September 23.

Tex., Derby.—It is expected that \$1500 of 5 per cent. 10-20 school-building bonds voted May 14 will soon be offered.

Tex., Edna.—Jackson County Commissioners, it is reported, have ordered \$100,000 of bonds for road improvements.

Tex., Farwell.—The \$19,000 of 5 per cent. 20-40 school-building bonds offered July 15 are reported sold.

Tex., Falfurrias.—Bids will be received, it is reported, for \$25,000 of 5 per cent. school bonds; denomination \$25. Address J. H. Morgan.

Tex., Flatonia.—Official: \$12,500 of 5 per cent. 10-40 schoolhouse bonds were voted September 20; denomination \$500. W. Willeford is secretary at Flatonia.

Tex., Georgetown.—The \$200,000 of 4½ per cent. 10-40 bonds of Road District No. 4 of this (Williamson) county offered July 22 are

reported to have been sold to the Texas Building Co. of Fort Worth, Tex., at par and interest.

Tex., Houston.—An ordinance has been introduced in the City Council for an issue of \$100,000 of street-paving bonds.

Tex., Lockhart.—Precinct No. 1 of this (Caldwell) county will vote in October, says a dispatch, on \$50,000 of road bonds.

Tex., Marshall.—The Harris Trust and Savings Bank of Chicago is reported to have bought the \$50,000 of 5 per cent. 10-40 high-school bonds for which bids were rejected July 12; denomination \$1000.

Tex., Miles.—The proposition to issue \$25,000 of road bonds was defeated, according to a dispatch.

Tex., Palestine.—Bids will be received, it is reported, until 3 P. M. October 17 for the \$17,000 of park and \$9000 fire-equipment 5 per cent. 10-40 bonds recently voted. A. L. Bowers is Mayor.

Tex., Rogers.—An election will be held October 18, says a dispatch, on \$14,000 of water-works bonds. J. D. King is Mayor.

Tex., San Angelo.—A dispatch says an election is ordered for October 20 on \$20,000 of street-paving bonds.

Tex., San Augustine.—Election is reported called for October 18 on \$25,000 of water-works bonds.

Tex., Shiner.—A dispatch says that \$8000 of water-works bonds have been voted.

Tex., Sinton.—Reported that San Patricio county on September 22 voted \$100,000 of road-improvement bonds.

Tex., Snyder.—Petitions are reported in circulation to hold an election on \$75,000 of 5 per cent. 10-40 road bonds of this (Scurry) county.

Tex., Stamford.—Official: \$100,000 of 40-year courthouse building bonds are authorized. James P. Stinson is County Judge.

Tex., Stamford.—A dispatch says that \$10,000 of paving bonds have been voted.

Tex., Waxahachie.—\$50,000 of 5 per cent. 40-year road bonds are reported signed by the authorities. They cover Ennis, Italy, Milford, Maypearl, Middlethian and Red Oak districts.

Va., Lebanon.—\$25,000 of 5 per cent. road-improvement bonds, 25 and 30-year, are to be sold by the Supervisors of Russell county. Address L. L. Bays, Lebanon, Va.

Va., Norfolk.—The Massachusetts Mutual Life Insurance Co., it is reported, has purchased \$50,000 of Norfolk city bonds maturing in 1940.

Va., Portsmouth.—The City Council has, it is reported, approved the ordinance to issue \$600,000 of bonds for water-works, and it will be prepared for submission to a vote of the people.

Va., Staunton.—The Board of Aldermen, it is reported, has approved the proposition to issue \$10,000 of street repair bonds.

Va., Washington.—Bids will be received at 10:30 A. M. November 1 for \$10,000 of 5 per cent. 5-35-year road improvement bonds of Rappahannock county; denomination \$500. W. C. Armstrong is clerk of the Board of Supervisors.

W. Va., Avis, P. O. Hinton).—Official: City of Avis (adjoining Hinton) has voted \$15,000 of paving and sewer bonds, 6 per cent, of which \$6000 mature in 16 years and \$10,000 in 20 years; denomination \$100. Bids will be opened October 3. R. W. Ervin, Hinton, W. Va., is in charge.

W. Va., Bluefield.—An officer of this (Mercer) county is quoted as saying that an election will be ordered at the same time as the general election in November on \$200,000 of good-roads bonds.

At Lebanon, Va., proposals will now be received for \$25,000 of 5 per cent. 25 and 30-year road-improvement bonds of Russell county. Further particulars will be found in the advertising columns.

At Washington, Va., bids will be received at 10:30 A. M. November 1 for \$10,000 of 5 per cent. 5-35-year road improvement bonds of Rappahannock county. Further particulars will be found in the advertising columns.

At Elberton, Ga., bids will be received until 6 P. M. October 3 for \$25,000 of street-improvement bonds. Further particulars will be found in the advertising columns.

At Osyka, Miss., bids will be received until Tuesday, October 11 at 8 P. M. for \$20,000 of 6 per cent. water-works and electric-light bonds. Further particulars will be found in the advertising columns.

At Soper, Okla., bids will be received until noon October 10 for \$9000 of 6 per cent. water-works bonds. Further particulars will be found in the advertising columns.

